

PRINTERHANDBUCH

OKI Microline 320/321

| | | |
|-----------|----------------------|---------------------------|
| Modelle: | ***** | ***** |
| | * ML 320/321-STD * | * ML 320/321 IBM-/EPSON * |
| Art.-Nr.: | * ML 320 : 0132001 * | * ML 320 : 0132002 * |
| Art.-Nr.: | * ML 321 : 0132101 * | * ML 321 : 0132102 * |
| | * * | * Remote Emulations * |
| | * * | * Control (Seite: 17) * |
| | ***** | **-----** |
| | | * ML 320/321 IBM * |
| | | * (Graphicpr. 5152) * |
| | | *-----* |
| | | * ML 320/321 IBM * |
| | | * (Proprinter 4201/2) * |
| | | *-----* |
| | | * ML 320/321 EPSON * |
| | | * (Epson FX, EX) * |
| | | ***** |

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| | (300 bis 28800 bps,8,N,1) |
| T-ONLINE/DATEX-J/Btx: | *222333# |

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*****
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*   ML 320/321 - STD   Seite: 02/03
*
*****
*
* kompatibel mit:
*
*   ML 192/193 - STD
*
*   ML 182/183 - STD
*
*   ML  92/ 93 - STD
*
*   ML  82/ 83 - STD
*
*
*
*
*-----*
*
*****   Parallel Centronics Schnittstelle
*
*
*****
*****   RS-232 C Schnittstelle
*
*   Art.-Nr.:   0639011
*
*****
*****   RS-422 Schnittstelle
*
*   Art.-Nr.:   0639012
*
*****
*   Current Loop/RS232 Schnittstelle *
*(Co-Resident)   Art.-Nr.:   0639017
*****

```

| FUNCTION | COMMENT | ASCII | HEXADECIMAL |
|---------------------------|----------------------|------------------|-------------------|
| ----- | | | |
| CHARACTER SET | | | |
| ===== | | | |
| BLOCK GRAPHIC CHAR. SET | | ESC ! 1 | 1B 21 31 |
| IBM CHARACTER SET | | ESC ! 2 | 1B 21 32 |
| NATIONAL CHARACTER SET | | ESC ! n | 1B 21 n |
| SHIFT IN | 7 BIT:GET LOW ASCII | SI | 0F |
| SHIFT OUT | 7 BIT:GET HIGH ASCII | SO | 0E |
| STANDARD CHARACTER SET | | ESC ! 0 | 1B 21 30 |
| | | | |
| COMPOSITE COMMANDS | | | |
| ===== | | | |
| COMBINED CR/LF | | ESC ? n : | 1B 3F n 3A |
| COMBINED GRAPHIC COMMANDS | | ESC * n1 n2 : | 1B 2A n1 n2 3A |
| COMBINED PRINT MODE CMDS. | | ESC & n1-n4 : | 1B 26 n1-n4 3A |
| | | | |
| CUT SHEET FEEDER | | | |
| ===== | | | |
| BIN 1 SELECT | | ESC EM 1 | 1B 19 31 |
| BIN 2 SELECT | | ESC EM 2 | 1B 19 32 |
| CSF EJECT | | ESC V | 1B 56 |
| CSF INSERT | | ESC S | 1B 53 |
| | | | |
| DOWNLINE LOADABLE CHR.GEN | | | |
| ===== | | | |
| COPY STD SET TO DLL CG | | ESC \$ | 1B 24 |
| DESIGNATES DLL QUASI-NLQ | | ESC 7 | 1B 37 |
| DESIGNATES DLL UM CHR.SET | | ESC 2 | 1B 32 |
| LOAD DLL ASCENDER (UM) | | ESC % A m n1-n11 | 1B 25 41 m n1-n11 |
| LOAD DLL DESCENDER (UM) | | ESC % D m n1-n11 | 1B 25 44 m n1-n11 |
| | | | |
| EXECUTION | | | |
| ===== | | | |
| BACKSPACE | | BS | 08 |
| CARRIAGE RETURN | | CR | 0D |
| CLEAR BUFFER,SET DEFAULTS | | CAN | 18 |
| FORM FEED | | FF | 0C |
| LINE FEED | | LF | 0A |
| PRINT SUPPRESS OFF | | DC1 | 11 |
| PRINT SUPPRESS ON | NO PRINT UNTIL "DC1" | DC3 | 13 |
| SET DEFAULTS,PRINT BUFFER | | ESC CAN | 1B 18 |
| VAR. LINE FEED n/144" | | ESC % 5 n | 1B 25 35 n |
| | | | |
| FORMATTING | | | |
| ===== | | | |
| DIRECT SKIP | | ESC VT n1 n2 | 1B 0B n1 n2 |
| FORM LENGTH BY 1/2 INCHES | | ESC G n1 n2 | 1B 47 n1 n2 |
| FORM LENGTH BY LINES | | ESC F n1 n2 | 1B 46 n1 n2 |
| HORIZONTAL TABULATOR | | HT | 09 |
| HTABS BY DOTS | | ESC ETX n1-n4 CR | 1B 03 n1-n4 0D |
| HTABS BY DOTS | | ESC ETX CR | 1B 03 0D |
| HTABS CLEAR | | ESC HT CR | 1B 09 0D |

| | | | |
|-------------------------|----------------------|--------------------|-------------------|
| HTABS SET BY CHARACTERS | | ESC HT n1 n2 n3 CR | 1B 09 n1 n2 n3 0D |
| LINE FEED ONLY | PRINTS DATA, NO "CR" | ESC DC2 | 1B 12 |
| MARGIN SET LEFT | BY DOT COLUMN | ESC % C n1-n3 | 1B 25 43 n1-n3 |
| MARGIN SET RIGHT | BY DOT COLUMN | ESC % R n1-n4 | 1B 25 52 n1-n4 |
| SKIP OVER PERFORATION | 1/3", | ESC % S n | 1B 25 53 n |
| TOF SET | | ESC 5 | 1B 35 |
| VERTICAL TABULATOR SKIP | TO VFU SELECTED POS. | VT n | 0B n |
| VFU LOAD START CODE | | DC4 | 14 |
| VFU LOAD STOP CODE | | ? | 3F |

| FUNCTION | COMMENT | ASCII | HEXADECIMAL |
|---------------------------|-----------------------|-----------|-------------|
| ----- | | | |
| GRAPHICS, BIT IMAGE | | | |
| ===== | | | |
| DENSITY DOUBLE | | ESC R | 1B 52 |
| DENSITY SINGLE | | ESC P | 1B 50 |
| GRAPHIC END | | ETX STX | 03 02 |
| GRAPHIC LF WITHOUT CR | | ETX DC4 | 03 14 |
| GRAPHIC LINE FEED WITH CR | | ETX SO | 03 0E |
| GRAPHIC START | | ETX | 03 |
| QUASI DOUBLE DENSITY | | ESC Q | 1B 51 |
| TEXT LINE FEED WITH CR | | ETX LF | 03 0A |
| TEXT LINE FEED WITHOUT CR | | ETX DC2 | 03 12 |
| | | | |
| LINE SPACING | | | |
| ===== | | | |
| 6 LPI | | ESC 6 | 1B 36 |
| 8 LPI | | ESC 8 | 1B 38 |
| VAR. LINE SPACING n/144" | | ESC % 9 n | 1B 25 39 n |
| | | | |
| MISCELLANEOUS | | | |
| ===== | | | |
| PAPER OUT SENSOR OFF | | ESC E 1 | 1B 45 31 |
| PAPER OUT SENSOR ON | | ESC E 0 | 1B 45 30 |
| PRINT BIDIRECTIONAL | | ESC = | 1B 3D |
| PRINT UNIDIRECTIONAL | | ESC - | 1B 2D |
| | | | |
| PRINT MODE | | | |
| ===== | | | |
| 10 CPI | PICA | RS | 1E |
| 12 CPI | ELITE | FS | 1C |
| 17 CPI | CONDENSED | GS | 1D |
| 20 CPI | | ESC # 3 | 1B 23 33 |
| DESIGNATES NLQ MODE | NLQ COURIER | ESC 1 | 1B 31 |
| DESIGNATES NLQ SANS SERIF | | ESC 3 | 1B 33 |
| DESIGNATES UTILITY MODE | UTILITY MODE | ESC 0 | 1B 30 |
| DOUBLE HEIGHT OFF | | ESC US 0 | 1B 1F 30 |
| DOUBLE HEIGHT ON | | ESC US 1 | 1B 1F 31 |
| DOUBLE WIDTH | USED WITH RS,FS,GS | US | 1F |
| DRAFT MODE DESIGNATE | | ESC # 0 | 1B 23 30 |
| EMPHASIZED OFF | ALSO ENHANCED OFF | ESC I | 1B 49 |
| EMPHASIZED ON | | ESC T | 1B 54 |
| ENHANCED OFF | ALSO EMPHASIZED OFF | ESC I | 1B 49 |
| ENHANCED ON | | ESC H | 1B 48 |
| ITALICS (SLANT) OFF | | ESC ! * | 1B 21 2A |
| ITALICS (SLANT) ON | | ESC ! / | 1B 21 2F |
| PROPORTIONAL SPACING OFF | | ESC Z | 1B 5A |
| PROPORTIONAL SPACING ON | | ESC Y | 1B 59 |
| SPACE BETWEEN CHARACTERS | | ESC N n | 1B 4E n |
| SUBSCRIPT OFF | | ESC M | 1B 4D |
| SUBSCRIPT ON | STOPS ALSO SUPERSCRIP | ESC L | 1B 4C |
| SUPERSCRIP OFF | | ESC K | 1B 4B |
| SUPERSCRIP ON | STOPS ALSO SUBSCRIPT | ESC J | 1B 4A |
| UNDERLINE OFF | | ESC D | 1B 44 |
| UNDERLINE ON | | ESC C | 1B 43 |

I. Proportional characters: Width Table Firmware:

Proportional Spacing : (ESC Z - ON, ESC Y - OFF)

| CHARACTER CODE | | | | | | SETWIDTH |
|----------------|---|-----|---|-----|---|----------|
| HEX | | DEC | | OCT | | #/120 " |
| ----- | | | | | | |
| 00 | - | 000 | - | 000 | = | |
| 01 | - | 001 | - | 001 | = | |
| 02 | - | 002 | - | 002 | = | |
| 03 | - | 003 | - | 003 | = | 12 |
| 04 | - | 004 | - | 004 | = | 12 |
| 05 | - | 005 | - | 005 | = | 12 |
| 06 | - | 006 | - | 006 | = | 12 |
| 07 | - | 007 | - | 007 | = | |
| 08 | - | 008 | - | 010 | = | |
| 09 | - | 009 | - | 011 | = | |
| 0A | - | 010 | - | 012 | = | |
| 0B | - | 011 | - | 013 | = | |
| 0C | - | 012 | - | 014 | = | |
| 0D | - | 013 | - | 015 | = | |
| 0E | - | 014 | - | 016 | = | |
| 0F | - | 015 | - | 017 | = | 12 |
| 10 | - | 016 | - | 020 | = | |
| 11 | - | 017 | - | 021 | = | |
| 12 | - | 018 | - | 022 | = | |
| 13 | - | 019 | - | 023 | = | |
| 14 | - | 020 | - | 024 | = | |
| 15 | - | 021 | - | 025 | = | 12 |
| 16 | - | 022 | - | 026 | = | |
| 17 | - | 023 | - | 027 | = | |
| 18 | - | 024 | - | 030 | = | |
| 19 | - | 025 | - | 031 | = | |
| 1A | - | 026 | - | 032 | = | |
| 1B | - | 027 | - | 033 | = | |
| 1C | - | 028 | - | 034 | = | |
| 1D | - | 029 | - | 035 | = | |
| 1E | - | 030 | - | 036 | = | |
| 1F | - | 031 | - | 037 | = | |
| 20 | - | 032 | - | 040 | = | 12 |
| 21 | - | 033 | - | 041 | = | 08 |
| 22 | - | 034 | - | 042 | = | 09 |
| 23 | - | 035 | - | 043 | = | 12 |
| 24 | - | 036 | - | 044 | = | 12 |
| 25 | - | 037 | - | 045 | = | 12 |
| 26 | - | 038 | - | 046 | = | 12 |
| 27 | - | 039 | - | 047 | = | 08 |
| 28 | - | 040 | - | 050 | = | 08 |
| 29 | - | 041 | - | 051 | = | 08 |
| 2A | - | 042 | - | 052 | = | 10 |
| 2B | - | 043 | - | 053 | = | 10 |
| 2C | - | 044 | - | 054 | = | 08 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-----|-----|---|----------|------|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 2D | - | 045 | - | 055 | = 10 |
| 2E | - | 046 | - | 056 | = 08 |
| 2F | - | 047 | - | 057 | = 12 |
| 30 | - | 048 | - | 060 | = 12 |
| 31 | - | 049 | - | 061 | = 12 |
| 32 | - | 050 | - | 062 | = 12 |
| 33 | - | 051 | - | 063 | = 12 |
| 34 | - | 052 | - | 064 | = 12 |
| 35 | - | 053 | - | 065 | = 12 |
| 36 | - | 054 | - | 066 | = 12 |
| 37 | - | 055 | - | 067 | = 12 |
| 38 | - | 056 | - | 070 | = 12 |
| 39 | - | 057 | - | 071 | = 12 |
| 3A | - | 058 | - | 072 | = 08 |
| 3B | - | 059 | - | 073 | = 08 |
| 3C | - | 060 | - | 074 | = 12 |
| 3D | - | 061 | - | 075 | = 12 |
| 3E | - | 062 | - | 076 | = 12 |
| 3F | - | 063 | - | 077 | = 09 |
| 40 | - | 064 | - | 100 | = 12 |
| 41 | - | 065 | - | 101 | = 12 |
| 42 | - | 066 | - | 102 | = 12 |
| 43 | - | 067 | - | 103 | = 12 |
| 44 | - | 068 | - | 104 | = 12 |
| 45 | - | 069 | - | 105 | = 12 |
| 46 | - | 070 | - | 106 | = 12 |
| 47 | - | 071 | - | 107 | = 12 |
| 48 | - | 072 | - | 110 | = 12 |
| 49 | - | 073 | - | 111 | = 08 |
| 4A | - | 074 | - | 112 | = 12 |
| 4B | - | 075 | - | 113 | = 12 |
| 4C | - | 076 | - | 114 | = 12 |
| 4D | - | 077 | - | 115 | = 12 |
| 4E | - | 078 | - | 116 | = 12 |
| 4F | - | 079 | - | 117 | = 12 |
| 50 | - | 080 | - | 120 | = 12 |
| 51 | - | 081 | - | 121 | = 12 |
| 52 | - | 082 | - | 122 | = 12 |
| 53 | - | 083 | - | 123 | = 12 |
| 54 | - | 084 | - | 124 | = 12 |
| 55 | - | 085 | - | 125 | = 12 |
| 56 | - | 086 | - | 126 | = 12 |
| 57 | - | 087 | - | 127 | = 12 |
| 58 | - | 088 | - | 130 | = 12 |
| 59 | - | 089 | - | 131 | = 12 |
| 5A | - | 090 | - | 132 | = 12 |
| 5B | - | 091 | - | 133 | = 08 |
| 5C | - | 092 | - | 134 | = 12 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|-----------|---------------------|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 5D | - 093 | - 135 | = | 08 | |
| 5E | - 094 | - 136 | = | 09 | |
| 5F | - 095 | - 137 | = | 12 | |
| 60 | - 096 | - 140 | = | 08 | |
| 61 | - 097 | - 141 | = | 12 | |
| 62 | - 098 | - 142 | = | 12 | |
| 63 | - 099 | - 143 | = | 12 | |
| 64 | - 100 | - 144 | = | 12 | |
| 65 | - 101 | - 145 | = | 12 | |
| 66 | - 102 | - 146 | = | 10 | |
| 67 | - 103 | - 147 | = | 12 | |
| 68 | - 104 | - 150 | = | 12 | |
| 69 | - 105 | - 151 | = | 08 | |
| 6A | - 106 | - 152 | = | 9,5 (10) | until version 04.11 |
| 6B | - 107 | - 153 | = | 12 | |
| 6C | - 108 | - 154 | = | 09 | |
| 6D | - 109 | - 155 | = | 12 | |
| 6E | - 110 | - 156 | = | 12 | |
| 6F | - 111 | - 157 | = | 12 | |
| 70 | - 112 | - 160 | = | 12 | |
| 71 | - 113 | - 161 | = | 12 | |
| 72 | - 114 | - 162 | = | 12 | |
| 73 | - 115 | - 163 | = | 12 | |
| 74 | - 116 | - 164 | = | 11,5 (11) | until version 04.11 |
| 75 | - 117 | - 165 | = | 12 | |
| 76 | - 118 | - 166 | = | 12 | |
| 77 | - 119 | - 167 | = | 12 | |
| 78 | - 120 | - 170 | = | 12 | |
| 79 | - 121 | - 171 | = | 12 | |
| 7A | - 122 | - 172 | = | 12 | |
| 7B | - 123 | - 173 | = | 08 | |
| 7C | - 124 | - 174 | = | 08 | |
| 7D | - 125 | - 175 | = | 08 | |
| 7E | - 126 | - 176 | = | 11 | |
| 7F | - 127 | - 177 | = | 12 | |
| 80 | - 128 | - 200 | = | 12 | |
| 81 | - 129 | - 201 | = | 12 | |
| 82 | - 130 | - 202 | = | 12 | |
| 83 | - 131 | - 203 | = | 12 | |
| 84 | - 132 | - 204 | = | 12 | |
| 85 | - 133 | - 205 | = | 12 | |
| 86 | - 134 | - 206 | = | 12 | |
| 87 | - 135 | - 207 | = | 12 | |
| 88 | - 136 | - 210 | = | 12 | |
| 89 | - 137 | - 211 | = | 12 | |
| 8A | - 138 | - 212 | = | 12 | |
| 8B | - 139 | - 213 | = | 09 | |
| 8C | - 140 | - 214 | = | 08 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 8D | - 141 | - 215 | = | 08 | |
| 8E | - 142 | - 216 | = | 12 | |
| 8F | - 143 | - 217 | = | 12 | |
| 90 | - 144 | - 220 | = | 12 | |
| 91 | - 145 | - 221 | = | 12 | |
| 92 | - 146 | - 222 | = | 12 | |
| 93 | - 147 | - 223 | = | 12 | |
| 94 | - 148 | - 224 | = | 10 | |
| 95 | - 149 | - 225 | = | 10 | |
| 96 | - 150 | - 226 | = | 12 | |
| 97 | - 151 | - 227 | = | 12 | |
| 98 | - 152 | - 230 | = | 12 | |
| 99 | - 153 | - 231 | = | 12 | |
| 9A | - 154 | - 232 | = | 12 | |
| 9B | - 155 | - 233 | = | 10 | |
| 9C | - 156 | - 234 | = | 12 | |
| 9D | - 157 | - 235 | = | 12 | |
| 9E | - 158 | - 236 | = | 12 | |
| 9F | - 159 | - 237 | = | 11 | |
| A0 | - 160 | - 240 | = | 12 | |
| A1 | - 161 | - 241 | = | 08 | |
| A2 | - 162 | - 242 | = | 12 | |
| A3 | - 163 | - 243 | = | 12 | |
| A4 | - 164 | - 244 | = | 12 | |
| A5 | - 165 | - 245 | = | 12 | |
| A6 | - 166 | - 246 | = | 12 | |
| A7 | - 167 | - 247 | = | 12 | |
| A8 | - 168 | - 250 | = | 09 | |
| A9 | - 169 | - 251 | = | 12 | |
| AA | - 170 | - 252 | = | 12 | |
| AB | - 171 | - 253 | = | 12 | |
| AC | - 172 | - 254 | = | 12 | |
| AD | - 173 | - 255 | = | 08 | |
| AE | - 174 | - 256 | = | 12 | |
| AF | - 175 | - 257 | = | 12 | |
| B0 | - 176 | - 260 | = | 12 | |
| B1 | - 177 | - 261 | = | 12 | |
| B2 | - 178 | - 262 | = | 12 | |
| B3 | - 179 | - 263 | = | 12 | |
| B4 | - 180 | - 264 | = | 12 | |
| B5 | - 181 | - 265 | = | 12 | |
| B6 | - 182 | - 266 | = | 12 | |
| B7 | - 183 | - 267 | = | 12 | |
| B8 | - 184 | - 270 | = | 12 | |
| B9 | - 185 | - 271 | = | 12 | |
| BA | - 186 | - 272 | = | 12 | |
| BB | - 187 | - 273 | = | 12 | |
| BC | - 188 | - 274 | = | 12 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| BD | - 189 | - 275 | = | 12 | |
| BE | - 190 | - 276 | = | 12 | |
| BF | - 191 | - 277 | = | 12 | |
| C0 | - 192 | - 300 | = | 12 | |
| C1 | - 193 | - 301 | = | 12 | |
| C2 | - 194 | - 302 | = | 12 | |
| C3 | - 195 | - 303 | = | 12 | |
| C4 | - 196 | - 304 | = | 12 | |
| C5 | - 197 | - 305 | = | 12 | |
| C6 | - 198 | - 306 | = | 12 | |
| C7 | - 199 | - 307 | = | 12 | |
| C8 | - 200 | - 310 | = | 12 | |
| C9 | - 201 | - 311 | = | 12 | |
| CA | - 202 | - 312 | = | 12 | |
| CB | - 203 | - 313 | = | 12 | |
| CC | - 204 | - 314 | = | 12 | |
| CD | - 205 | - 315 | = | 12 | |
| CE | - 206 | - 316 | = | 12 | |
| CF | - 207 | - 317 | = | 12 | |
| D0 | - 208 | - 320 | = | 12 | |
| D1 | - 209 | - 321 | = | 12 | |
| D2 | - 210 | - 322 | = | 12 | |
| D3 | - 211 | - 323 | = | 12 | |
| D4 | - 212 | - 324 | = | 12 | |
| D5 | - 213 | - 325 | = | 12 | |
| D6 | - 214 | - 326 | = | 12 | |
| D7 | - 215 | - 327 | = | 12 | |
| D8 | - 216 | - 330 | = | 12 | |
| D9 | - 217 | - 331 | = | 12 | |
| DA | - 218 | - 332 | = | 12 | |
| DB | - 219 | - 333 | = | 12 | |
| DC | - 220 | - 334 | = | 12 | |
| DD | - 221 | - 335 | = | 12 | |
| DE | - 222 | - 336 | = | 12 | |
| DF | - 223 | - 337 | = | 12 | |
| E0 | - 224 | - 340 | = | 11 | |
| E1 | - 225 | - 341 | = | 12 | |
| E2 | - 226 | - 342 | = | 12 | |
| E3 | - 227 | - 343 | = | 10 | |
| E4 | - 228 | - 344 | = | 12 | |
| E5 | - 229 | - 345 | = | 11 | |
| E6 | - 230 | - 346 | = | 12 | |
| E7 | - 231 | - 347 | = | 12 | |
| E8 | - 232 | - 350 | = | 12 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|---|-----|-----|----------|--------|
| HEX | | DEC | OCT | | #/120" |
| ----- | | | | | |
| E9 | - | 233 | - | 351 | = 10 |
| EA | - | 234 | - | 352 | = 12 |
| EB | - | 235 | - | 353 | = 10 |
| EC | - | 236 | - | 354 | = 12 |
| ED | - | 237 | - | 355 | = 12 |
| EE | - | 238 | - | 356 | = 12 |
| EF | - | 239 | - | 357 | = 12 |
| F0 | - | 240 | - | 360 | = 10 |
| F1 | - | 241 | - | 361 | = 10 |
| F2 | - | 242 | - | 362 | = 10 |
| F3 | - | 243 | - | 363 | = 10 |
| F4 | - | 244 | - | 364 | = 12 |
| F5 | - | 245 | - | 365 | = 12 |
| F6 | - | 246 | - | 366 | = 10 |
| F7 | - | 247 | - | 367 | = 10 |
| F8 | - | 248 | - | 370 | = 10 |
| F9 | - | 249 | - | 371 | = 08 |
| FA | - | 250 | - | 372 | = 08 |
| FB | - | 251 | - | 373 | = 12 |
| FC | - | 252 | - | 374 | = 09 |
| FD | - | 253 | - | 375 | = 08 |
| FE | - | 254 | - | 376 | = 08 |
| FF | - | 255 | - | 377 | = 12 |

ISO 320 STD NORMAL (ESC ! n)

| Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Dec. Code | 35 | 36 | 38 | 48 | 60 | 62 | 64 | 91 | 92 | 93 | 94 | 96 | 105 | 123 | 124 | 125 | 126 |
| ASCII ESC! n | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ASCII (0) | 64 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 08 | 09 | 08 | 08 | 08 | 08 | 08 | 11 |
| ASCII (0) | 65 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 08 | 09 | 08 | 08 | 08 | 08 | 08 | 11 |
| BRITISH | 66 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 08 | 09 | 08 | 08 | 08 | 08 | 08 | 11 |
| GERMAN | 67 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 09 | 08 | 08 | 12 | 10 | 12 | 12 |
| FRENCH | 68 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 12 | 09 | 08 | 08 | 12 | 12 | 12 | 12 |
| SWEDISH 1 | 69 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 10 | 12 | 12 |
| DANISH | 70 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 08 | 12 | 12 | 12 | 12 |
| NORWEGIAN | 71 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 09 | 08 | 08 | 12 | 12 | 12 | 11 |
| DUTCH | 72 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 08 | 09 | 08 | 08 | 08 | 12 | 08 | 11 |
| ITALIAN | 73 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 12 | 09 | 12 | 08 | 12 | 10 | 12 | 08 |
| TRS-80 | 74 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 08 | 08 | 08 | 08 | 12 |
| SPANISH | 75 | 08 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 12 | 09 | 12 | 12 | 08 | 12 | 08 | 12 |
| SWEDISH 2 | 76 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 10 | 12 | 12 |
| SWEDISH 3 | 77 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 10 | 12 | 12 |
| SWEDISH 4 | 78 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 09 | 12 | 08 | 12 | 10 | 12 | 12 |
| Turkish | 79 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 10 | 12 | 12 | 12 | 08 | 08 | 12 | 12 | 12 |
| Swiss 1 | 80 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 09 | 08 | 08 | 12 | 10 | 12 | 12 |
| Swiss 2 | 81 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 09 | 08 | 08 | 12 | 10 | 12 | 12 |
| ----- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

Dutch-Table character 124 is 11 until version 04.11

I. Proportional characters: Width Table Firmware:

Proportional Spacing : (ESC Z - ON, ESC Y - OFF)
 Italics : (ESC ! / - ON, ESC ! * - OFF)

| CHARACTER CODE | | | SETWIDTH |
|----------------|-------|-------|----------|
| HEX | DEC | OCT | #/120" |
| ----- | | | |
| 00 | - 000 | - 000 | = |
| 01 | - 001 | - 001 | = |
| 02 | - 002 | - 002 | = |
| 03 | - 003 | - 003 | = 12 |
| 04 | - 004 | - 004 | = 12 |
| 05 | - 005 | - 005 | = 12 |
| 06 | - 006 | - 006 | = 12 |
| 07 | - 007 | - 007 | = |
| 08 | - 008 | - 010 | = |
| 09 | - 009 | - 011 | = |
| 0A | - 010 | - 012 | = |
| 0B | - 011 | - 013 | = |
| 0C | - 012 | - 014 | = |
| 0D | - 013 | - 015 | = |
| 0E | - 014 | - 016 | = |
| 0F | - 015 | - 017 | = 12 |
| 10 | - 016 | - 020 | = |
| 11 | - 017 | - 021 | = |
| 12 | - 018 | - 022 | = |
| 13 | - 019 | - 023 | = |
| 14 | - 020 | - 024 | = |
| 15 | - 021 | - 025 | = 12 |
| 16 | - 022 | - 026 | = |
| 17 | - 023 | - 027 | = |
| 18 | - 024 | - 030 | = |
| 19 | - 025 | - 031 | = |
| 1A | - 026 | - 032 | = |
| 1B | - 027 | - 033 | = |
| 1C | - 028 | - 034 | = |
| 1D | - 029 | - 035 | = |
| 1E | - 030 | - 036 | = |
| 1F | - 031 | - 037 | = |
| 20 | - 032 | - 040 | = 12 |
| 21 | - 033 | - 041 | = 10 |
| 22 | - 034 | - 042 | = 10 |
| 23 | - 035 | - 043 | = 12 |
| 24 | - 036 | - 044 | = 11 |
| 25 | - 037 | - 045 | = 12 |
| 26 | - 038 | - 046 | = 12 |
| 27 | - 039 | - 047 | = 05 |
| 28 | - 040 | - 050 | = 08 |
| 29 | - 041 | - 051 | = 08 |
| 2A | - 042 | - 052 | = 12 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-----|-----|---|----------|------|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 2B | - | 043 | - | 053 | = 12 |
| 2C | - | 044 | - | 054 | = 08 |
| 2D | - | 045 | - | 055 | = 12 |
| 2E | - | 046 | - | 056 | = 07 |
| 2F | - | 047 | - | 057 | = 10 |
| 30 | - | 048 | - | 060 | = 12 |
| 31 | - | 049 | - | 061 | = 09 |
| 32 | - | 050 | - | 062 | = 12 |
| 33 | - | 051 | - | 063 | = 12 |
| 34 | - | 052 | - | 064 | = 12 |
| 35 | - | 053 | - | 065 | = 12 |
| 36 | - | 054 | - | 066 | = 12 |
| 37 | - | 055 | - | 067 | = 12 |
| 38 | - | 056 | - | 070 | = 12 |
| 39 | - | 057 | - | 071 | = 12 |
| 3A | - | 058 | - | 072 | = 08 |
| 3B | - | 059 | - | 073 | = 09 |
| 3C | - | 060 | - | 074 | = 10 |
| 3D | - | 061 | - | 075 | = 11 |
| 3E | - | 062 | - | 076 | = 09 |
| 3F | - | 063 | - | 077 | = 11 |
| 40 | - | 064 | - | 100 | = 12 |
| 41 | - | 065 | - | 101 | = 12 |
| 42 | - | 066 | - | 102 | = 12 |
| 43 | - | 067 | - | 103 | = 12 |
| 44 | - | 068 | - | 104 | = 12 |
| 45 | - | 069 | - | 105 | = 12 |
| 46 | - | 070 | - | 106 | = 12 |
| 47 | - | 071 | - | 107 | = 12 |
| 48 | - | 072 | - | 110 | = 12 |
| 49 | - | 073 | - | 111 | = 10 |
| 4A | - | 074 | - | 112 | = 12 |
| 4B | - | 075 | - | 113 | = 12 |
| 4C | - | 076 | - | 114 | = 10 |
| 4D | - | 077 | - | 115 | = 12 |
| 4E | - | 078 | - | 116 | = 12 |
| 4F | - | 079 | - | 117 | = 12 |
| 50 | - | 080 | - | 120 | = 12 |
| 51 | - | 081 | - | 121 | = 12 |
| 52 | - | 082 | - | 122 | = 12 |
| 53 | - | 083 | - | 123 | = 12 |
| 54 | - | 084 | - | 124 | = 12 |
| 55 | - | 085 | - | 125 | = 12 |
| 56 | - | 086 | - | 126 | = 11 |
| 57 | - | 087 | - | 127 | = 12 |
| 58 | - | 088 | - | 130 | = 12 |
| 59 | - | 089 | - | 131 | = 12 |
| 5A | - | 090 | - | 132 | = 12 |

| CHARACTER CODE | | | | | SETWIDTH |
|----------------|-------|-------|---------|----|----------|
| HEX | DEC | OCT | #/120 " | | |
| ----- | | | | | |
| 5B | - 091 | - 133 | = | 11 | |
| 5C | - 092 | - 134 | = | 07 | |
| 5D | - 093 | - 135 | = | 11 | |
| 5E | - 094 | - 136 | = | 10 | |
| 5F | - 095 | - 137 | = | 12 | |
| 60 | - 096 | - 140 | = | 05 | |
| 61 | - 097 | - 141 | = | 11 | |
| 62 | - 098 | - 142 | = | 11 | |
| 63 | - 099 | - 143 | = | 11 | |
| 64 | - 100 | - 144 | = | 12 | |
| 65 | - 101 | - 145 | = | 11 | |
| 66 | - 102 | - 146 | = | 12 | |
| 67 | - 103 | - 147 | = | 11 | |
| 68 | - 104 | - 150 | = | 11 | |
| 69 | - 105 | - 151 | = | 09 | |
| 6A | - 106 | - 152 | = | 10 | |
| 6B | - 107 | - 153 | = | 11 | |
| 6C | - 108 | - 154 | = | 09 | |
| 6D | - 109 | - 155 | = | 11 | |
| 6E | - 110 | - 156 | = | 10 | |
| 6F | - 111 | - 157 | = | 11 | |
| 70 | - 112 | - 160 | = | 11 | |
| 71 | - 113 | - 161 | = | 11 | |
| 72 | - 114 | - 162 | = | 10 | |
| 73 | - 115 | - 163 | = | 11 | |
| 74 | - 116 | - 164 | = | 10 | |
| 75 | - 117 | - 165 | = | 11 | |
| 76 | - 118 | - 166 | = | 10 | |
| 77 | - 119 | - 167 | = | 12 | |
| 78 | - 120 | - 170 | = | 12 | |
| 79 | - 121 | - 171 | = | 11 | |
| 7A | - 122 | - 172 | = | 12 | |
| 7B | - 123 | - 173 | = | 10 | |
| 7C | - 124 | - 174 | = | 09 | |
| 7D | - 125 | - 175 | = | 10 | |
| 7E | - 126 | - 176 | = | 12 | |
| 7F | - 127 | - 177 | = | 12 | |
| 80 | - 128 | - 200 | = | 12 | |
| 81 | - 129 | - 201 | = | 12 | |
| 82 | - 130 | - 202 | = | 11 | |
| 83 | - 131 | - 203 | = | 12 | |
| 84 | - 132 | - 204 | = | 11 | |
| 85 | - 133 | - 205 | = | 11 | |
| 86 | - 134 | - 206 | = | 11 | |
| 87 | - 135 | - 207 | = | 11 | |
| 88 | - 136 | - 210 | = | 12 | |
| 89 | - 137 | - 211 | = | 11 | |
| 8A | - 138 | - 212 | = | 11 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120 " | |
| ----- | | | | | |
| 8B | - 139 | - 213 | = | 10 | |
| 8C | - 140 | - 214 | = | 11 | |
| 8D | - 141 | - 215 | = | 08 | |
| 8E | - 142 | - 216 | = | 12 | |
| 8F | - 143 | - 217 | = | 12 | |
| 90 | - 144 | - 220 | = | 12 | |
| 91 | - 145 | - 221 | = | 12 | |
| 92 | - 146 | - 222 | = | 12 | |
| 93 | - 147 | - 223 | = | 12 | |
| 94 | - 148 | - 224 | = | 11 | |
| 95 | - 149 | - 225 | = | 11 | |
| 96 | - 150 | - 226 | = | 11 | |
| 97 | - 151 | - 227 | = | 11 | |
| 98 | - 152 | - 230 | = | 11 | |
| 99 | - 153 | - 231 | = | 12 | |
| 9A | - 154 | - 232 | = | 12 | |
| 9B | - 155 | - 233 | = | 11 | |
| 9C | - 156 | - 234 | = | 12 | |
| 9D | - 157 | - 235 | = | 12 | |
| 9E | - 158 | - 236 | = | 12 | |
| 9F | - 159 | - 237 | = | 12 | |
| A0 | - 160 | - 240 | = | 11 | |
| A1 | - 161 | - 241 | = | 10 | |
| A2 | - 162 | - 242 | = | 12 | |
| A3 | - 163 | - 243 | = | 11 | |
| A4 | - 164 | - 244 | = | 12 | |
| A5 | - 165 | - 245 | = | 12 | |
| A6 | - 166 | - 246 | = | 11 | |
| A7 | - 167 | - 247 | = | 12 | |
| A8 | - 168 | - 250 | = | 11 | |
| A9 | - 169 | - 251 | = | 12 | |
| AA | - 170 | - 252 | = | 12 | |
| AB | - 171 | - 253 | = | 12 | |
| AC | - 172 | - 254 | = | 12 | |
| AD | - 173 | - 255 | = | 10 | |
| AE | - 174 | - 256 | = | 12 | |
| AF | - 175 | - 257 | = | 12 | |
| B0 | - 176 | - 260 | = | 12 | |
| B1 | - 177 | - 261 | = | 12 | |
| B2 | - 178 | - 262 | = | 12 | |
| B3 | - 179 | - 263 | = | 12 | |
| B4 | - 180 | - 264 | = | 12 | |
| B5 | - 181 | - 265 | = | 12 | |
| B6 | - 182 | - 266 | = | 12 | |
| B7 | - 183 | - 267 | = | 12 | |
| B8 | - 184 | - 270 | = | 12 | |
| B9 | - 185 | - 271 | = | 12 | |
| BA | - 186 | - 272 | = | 12 | |
| BB | - 187 | - 273 | = | 12 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| <i>BC</i> | - 188 | - 274 | = | 12 | |
| <i>BD</i> | - 189 | - 275 | = | 12 | |
| <i>BE</i> | - 190 | - 276 | = | 12 | |
| <i>BF</i> | - 191 | - 277 | = | 12 | |
| <i>C0</i> | - 192 | - 300 | = | 12 | |
| <i>C1</i> | - 193 | - 301 | = | 12 | |
| <i>C2</i> | - 194 | - 302 | = | 12 | |
| <i>C3</i> | - 195 | - 303 | = | 12 | |
| <i>C4</i> | - 196 | - 304 | = | 12 | |
| <i>C5</i> | - 197 | - 305 | = | 12 | |
| <i>C6</i> | - 198 | - 306 | = | 12 | |
| <i>C7</i> | - 199 | - 307 | = | 12 | |
| <i>C8</i> | - 200 | - 310 | = | 12 | |
| <i>C9</i> | - 201 | - 311 | = | 12 | |
| <i>CA</i> | - 202 | - 312 | = | 12 | |
| <i>CB</i> | - 203 | - 313 | = | 12 | |
| <i>CC</i> | - 204 | - 314 | = | 12 | |
| <i>CD</i> | - 205 | - 315 | = | 12 | |
| <i>CE</i> | - 206 | - 316 | = | 12 | |
| <i>CF</i> | - 207 | - 317 | = | 12 | |
| <i>D0</i> | - 208 | - 320 | = | 12 | |
| <i>D1</i> | - 209 | - 321 | = | 12 | |
| <i>D2</i> | - 210 | - 322 | = | 12 | |
| <i>D3</i> | - 211 | - 323 | = | 12 | |
| <i>D4</i> | - 212 | - 324 | = | 12 | |
| <i>D5</i> | - 213 | - 325 | = | 12 | |
| <i>D6</i> | - 214 | - 326 | = | 12 | |
| <i>D7</i> | - 215 | - 327 | = | 12 | |
| <i>D8</i> | - 216 | - 330 | = | 12 | |
| <i>D9</i> | - 217 | - 331 | = | 12 | |
| <i>DA</i> | - 218 | - 332 | = | 12 | |
| <i>DB</i> | - 219 | - 333 | = | 12 | |
| <i>DC</i> | - 220 | - 334 | = | 12 | |
| <i>DD</i> | - 221 | - 335 | = | 12 | |
| <i>DE</i> | - 222 | - 336 | = | 12 | |
| <i>DF</i> | - 223 | - 337 | = | 12 | |
| <i>E0</i> | - 224 | - 340 | = | 12 | |
| <i>E1</i> | - 225 | - 341 | = | 11 | |
| <i>E2</i> | - 226 | - 342 | = | 12 | |
| <i>E3</i> | - 227 | - 343 | = | 12 | |
| <i>E4</i> | - 228 | - 344 | = | 12 | |
| <i>E5</i> | - 229 | - 345 | = | 12 | |
| <i>E6</i> | - 230 | - 346 | = | 12 | |
| <i>E7</i> | - 231 | - 347 | = | 12 | |
| <i>E8</i> | - 232 | - 350 | = | 12 | |
| <i>E9</i> | - 233 | - 351 | = | 12 | |
| <i>EA</i> | - 234 | - 352 | = | 12 | |
| <i>EB</i> | - 235 | - 353 | = | 11 | |

CHARACTER CODE SETWIDTH CHARACTER

HEX DEC OCT #/120"

```

-----
      EC - 236 - 354 = 12
      ED - 237 - 355 = 11
      EE - 238 - 356 = 10
      EF - 239 - 357 = 12
      F0 - 240 - 360 = 12
      F1 - 241 - 361 = 12
      F2 - 242 - 362 = 10
      F3 - 243 - 363 = 10
      F4 - 244 - 364 = 12
      F5 - 245 - 365 = 12
      F6 - 246 - 366 = 12
      F7 - 247 - 367 = 12
      F8 - 248 - 370 = 08
      F9 - 249 - 371 = 06
      FA - 250 - 372 = 06
      FB - 251 - 373 = 12
      FC - 252 - 374 = 08
      FD - 253 - 375 = 08
      FE - 254 - 376 = 08
      FF - 255 - 377 = 12

```

ISO 320 STD ITALICS (ESC ! n)

| Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Dec. Code | 35 | 36 | 38 | 48 | 60 | 62 | 64 | 91 | 92 | 93 | 94 | 96 | 105 | 123 | 124 | 125 | 126 | |
| ASCII ESC! n | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| ASCII (0) | 64 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 07 | 11 | 10 | 05 | 09 | 10 | 09 | 10 | 12 |
| ASCII (O) | 65 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 07 | 11 | 10 | 05 | 09 | 10 | 09 | 10 | 12 |
| BRITISH | 66 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 07 | 11 | 10 | 05 | 09 | 10 | 09 | 10 | 12 |
| GERMAN | 67 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 05 | 09 | 11 | 11 | 12 | 11 |
| FRENCH | 68 | 12 | 11 | 12 | 12 | 10 | 09 | 11 | 12 | 11 | 12 | 10 | 05 | 09 | 11 | 11 | 11 | 09 |
| SWEDISH 1 | 69 | 12 | 12 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 11 | 12 |
| DANISH | 70 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 05 | 09 | 12 | 11 | 11 | 12 |
| NORWEGIAN | 71 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 12 | 09 | 12 | 11 | 11 | 12 |
| DUTCH | 72 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 12 | 11 | 10 | 05 | 09 | 10 | 12 | 10 | 12 |
| ITALIAN | 73 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 11 | 11 | 10 | 11 | 09 | 11 | 11 | 11 | 08 |
| TRS-80 | 74 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 05 | 09 | 10 | 09 | 10 | 12 |
| SPANISH | 75 | 10 | 11 | 12 | 12 | 10 | 09 | 10 | 12 | 12 | 11 | 12 | 11 | 09 | 11 | 10 | 12 | 11 |
| SWEDISH 2 | 76 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 11 | 12 |
| SWEDISH 3 | 77 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 11 | 12 |
| SWEDISH 4 | 78 | 12 | 12 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 11 | 09 | 11 | 11 | 11 | 12 |
| Turkish | 79 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 09 | 11 | 12 | 12 | 11 | 09 | 12 | 12 | 12 | 12 |
| Swiss 1 | 80 | 12 | 11 | 12 | 12 | 09 | 10 | 11 | 11 | 11 | 11 | 10 | 05 | 09 | 11 | 11 | 12 | 07 |
| Swiss 2 | 81 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 11 | 11 | 10 | 05 | 09 | 11 | 11 | 12 | 11 |
| ----- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

```

*****
*
*   ML 320/321 - IBM/EPSON
*
*****
*
* Remote Control Emulation      Seite: 18
*
*-----*
*
* IBM Graphicprinter 5152      Seite: 19
*
* IBM Proprinter 4201/2      Seite: 34
*
* EPSON FX, EX                Seite: 50
*
*
*
*
*-----*
*
***** Parallel Centronics Schnittstelle
*
*
*****
***** RS-232 C Schnittstelle
*
* Art.-Nr.: 0639011
*
*****
***** RS-422 Schnittstelle
*
* Art.-Nr.: 0639012
*
*****
* Current Loop Schnittstelle
*
* Art.-Nr.: 0639017
*****

```

```

*****
*
Printer:      *      ML 320/321 I/E      *
*
*      REMOTE EMULATION CONTROL      *
*
*****
*
Emulation:   *      IBM 5152      *      IBM 4201/2      *      Epson FX, EX      *
*
ASCII:       *  ESC  {  SOH  *  ESC  {  STX  *  ESC  {  A      *
Hexadec.:    *  1B   7B  01  *  1B   7B  02  *  1B   7B  41  *
Decimal:     *  27  123  01  *  27  123  02  *  27  123  65  *
*
*****
*
Emulation equals Menu - *  ESC  }  NUL  *
Setting                 *  1B   7D  00  *
                        *  27  125  00  *
                        *
*****

```

EMULATION SELECT COMMAND:

The Command is defined as follows: ASCII : ESC { 'n'

| | HEX | | | |
|----|----------|-------|---------|------------------------------|
| | 'n' = 00 | IBM | General | (Graphicprinter 5152) |
| *) | 'n' = 01 | IBM | GPR | Graphicprinter 5152 |
| *) | 'n' = 02 | IBM | PPR | Proprinter 4201/02 |
| | 'n' = 03 | --- | | Current Emulation /no change |
| | 'n' = 40 | EPSON | General | (Epson FX) |
| *) | 'n' = 41 | EPSON | FX | Epson FX |
| | 'n' = 42 | --- | | Current Emulation /no change |

*) Note: Normally use only marked commands!

EMULATION RESET COMMAND:

The Command is defined as follows: ASCII : ESC } NUL
 HEX: 1B 7D 00
 DEC: 27 125 00

This command resets the printer to the Emulation selected in the MENU.
 The printer is set to the same status as listed above by sending an Emulation change command.

```
*****
*
*   ML 320/321 - IBM 5152   Seite: 20/21
*
*****
*
*   kompatibel mit:
*
*   ML 292/3/4 - IBM 5152
*
*   ML 192/193 - IBM 5152
*
*
*
*
*
*
*
*
*
*
*****
```

| FUNCTION | COMMENT | ASCII | HEXADECIMAL |
|---------------------------|----------------------|------------------|-------------------|
| ----- | | | |
| CHARACTER SET | | | |
| ===== | | | |
| IBM CHARACTER SET I | | ESC 7 | 1B 37 |
| IBM CHARACTER SET II | | ESC 6 | 1B 36 |
| NATIONAL CHARACTER SET | | ESC ! n | 1B 21 n |
| | | | |
| CUT SHEET FEEDER | | | |
| ===== | | | |
| BIN 1 SELECT | | ESC EM 1 | 1B 19 31 |
| BIN 2 SELECT | | ESC EM 2 | 1B 19 32 |
| CSF EJECT | | ESC EM R | 1B 19 52 |
| CSF INSERT | | ESC EM I | 1B 19 49 |
| | | | |
| DOWNLINE LOADABLE CHR.GEN | | | |
| ===== | | | |
| COPY STD SET TO DLL CG | | ESC \$ | 1B 24 |
| DESIGNATES DLL QUASI-NLQ | | ESC % Z | 1B 25 5A |
| DESIGNATES DLL UM CHR.SET | | ESC % Y | 1B 25 59 |
| EXIT DLL | START UTI MODE | ESC I 1 | 1B 49 31 |
| EXIT DLL | START NLQ MODE | ESC I 3 | 1B 49 33 |
| LOAD DLL DESCENDER (UM) | | ESC % D m n1-n11 | 1B 25 44 m n1-n11 |
| | | | |
| EXECUTION | | | |
| ===== | | | |
| CARRIAGE RETURN | | CR | 0D |
| CLEAR BUFFER | | CAN | 18 |
| FORM FEED | | FF | 0C |
| HOME HEAD COMMAND | UNIDIR FOR 1 LINE | ESC < | 1B 3C |
| LINE FEED | | LF | 0A |
| VAR. LINE FEED n/216" | ONE LINE ONLY | ESC J n | 1B 4A n |
| | | | |
| FORMATTING | | | |
| ===== | | | |
| FORM LENGTH BY INCHES | ALSO SETS TOF | ESC C NUL n | 1B 43 00 n |
| FORM LENGTH BY LINES | ALSO SETS TOF | ESC C n | 1B 43 n |
| HORIZONTAL TABULATOR | | HT | 09 |
| HTABS CLEAR | | ESC D NUL | 1B 44 00 |
| HTABS SET BY CHARACTERS | | ESC D n1-nk NUL | 1B 44 n1-nk 00 |
| INDENTING | PRINTS POS. BY DOT | ESC % B.n1-n4 | 1B 25 42 n1-n4 |
| MARGIN SET | BY CHARACTER COLUMNS | ESC X n1 n2 | 1B 58 n1 n2 |
| SKIP OVER PERFORATION | BY LINES | ESC N n | 1B 4E n |
| SKIP OVER PERFORATION OFF | | ESC O | 1B 4F |
| VERTICAL TABULATOR SKIP | SAME AS LF | VT | 0B |
| | | | |
| GRAPHICS, BIT IMAGE | | | |
| ===== | | | |
| DENSITY DOUBLE | 120 * 72 DPI | ESC Y n1 n2 | 1B 59 n1 n2 |
| DENSITY DOUBLE HALF SPEED | 120 * 72 DPI | ESC L n1 n2 | 1B 4C n1 n2 |
| DENSITY QUADRUPLE | 240 * 72 DPI | ESC Z n1 n2 | 1B 5A n1 n2 |
| DENSITY SINGLE | 60 * 72 DPI | ESC K n1 n2 | 1B 4B n1 n2 |

LINE SPACING
=====

| | | | |
|--------------------------|----------------------|---------|---------|
| 6 LPI | WITHOUT PREV. ESC An | ESC 2 | 1B 32 |
| 8 LPI | | ESC 0 | 1B 30 |
| ACTIVATE ESC A n SPACING | NOT IN AGM,=>6 LPI | ESC 2 | 1B 32 |
| LINE SPACING 7/72" | FOR 7 BIT GRAPHICS | ESC 1 | 1B 31 |
| VAR. LINE SPACING n/216" | | ESC 3 n | 1B 33 n |
| VAR. LINE SPACING n/72" | ESC.2 MUST FOLLOW !! | ESC A n | 1B 41 n |

| FUNCTION | COMMENT | ASCII | HEXADECIMAL |
|--------------------------|-----------------------|---------|-------------|
| ----- | | | |
| MISCELLANEOUS | | | |
| ===== | | | |
| PAPER OUT SENSOR OFF | | ESC 8 | 1B 38 |
| PAPER OUT SENSOR ON | | ESC 9 | 1B 39 |
| PRINT BIDIRECTIONAL | | ESC U 0 | 1B 55 30 |
| PRINT UNIDIRECTIONAL | | ESC U 1 | 1B 55 31 |
| | | | |
| PRINT MODE | | | |
| ===== | | | |
| 10 CPI | PICA | DC2 | 12 |
| 12 CPI | ELITE | ESC : | 1B 3A |
| 17 CPI | FINE | SI | 0F |
| DESIGNATES ENHANCED MODE | | ESC I 2 | 1B 49 32 |
| DESIGNATES HSD MODE | | ESC # 0 | 1B 23 30 |
| DESIGNATES NLQ MODE | NEAR LETTER QUALITY | ESC I 3 | 1B 49 33 |
| DESIGNATES NLQ MODE | | ESC # 2 | 1B 23 30 |
| DESIGNATES UTILITY MODE | UTILITY MODE | ESC I 1 | 1B 49 31 |
| EMPHASIZED OFF | | ESC F | 1B 46 |
| EMPHASIZED ON | | ESC E | 1B 45 |
| ENHANCED OFF | DOUBLE STRIKE | ESC H | 1B 48 |
| ENHANCED ON | DOUBLE STRIKE | ESC G | 1B 47 |
| ITALICS (SLANT) OFF | | ESC % H | 1B 25 48 |
| ITALICS (SLANT) ON | | ESC % G | 1B 25 47 |
| PROPORTIONAL SPACING OFF | | ESC % Q | 1B 25 51 |
| PROPORTIONAL SPACING ON | | ESC % P | 1B 25 50 |
| SPACE BETWEEN CHARACTERS | | ESC V n | 1B 56 n |
| SUBSCRIPT OFF | ALSO SUPERSCRIPIT OFF | ESC T | 1B 54 |
| SUBSCRIPT ON | SOH OR ANY ODD NO. | ESC S 1 | 1B 53 31 |
| SUPERSCRIPIT OFF | ALSO SUBSCRIPT OFF | ESC T | 1B 54 |
| SUPERSCRIPIT ON | NUL OR ANY EVEN NO. | ESC S 0 | 1B 53 30 |
| UNDERLINE OFF | UNDERSCORE | ESC - 0 | 1B 2D 30 |
| UNDERLINE ON | UNDERSCORE | ESC - 1 | 1B 2D 31 |
| WIDTH DOUBLE | FOR ONE LINE ONLY | SO | 0E |
| WIDTH DOUBLE OFF | | ESC W 0 | 1B 57 30 |
| WIDTH DOUBLE OFF | BEFORE END OF LINE | DC4 | 14 |
| WIDTH DOUBLE ON | | ESC W 1 | 1B 57 31 |

I. Proportional characters: Width Table Firmware:

Proportional Spacing : (ESC %P - ON, ESC %Q - OFF)

| CHARACTER CODE | | | | | SETWIDTH |
|----------------|---|-----|---|-----|----------|
| HEX | | DEC | | OCT | #/120 " |
| ----- | | | | | |
| 00 | - | 000 | - | 000 | = |
| 01 | - | 001 | - | 001 | = |
| 02 | - | 002 | - | 002 | = |
| 03 | - | 003 | - | 003 | = 12 |
| 04 | - | 004 | - | 004 | = 12 |
| 05 | - | 005 | - | 005 | = 12 |
| 06 | - | 006 | - | 006 | = 12 |
| 07 | - | 007 | - | 007 | = |
| 08 | - | 008 | - | 010 | = |
| 09 | - | 009 | - | 011 | = |
| 0A | - | 010 | - | 012 | = |
| 0B | - | 011 | - | 013 | = |
| 0C | - | 012 | - | 014 | = |
| 0D | - | 013 | - | 015 | = |
| 0E | - | 014 | - | 016 | = |
| 0F | - | 015 | - | 017 | = 12 |
| 10 | - | 016 | - | 020 | = |
| 11 | - | 017 | - | 021 | = |
| 12 | - | 018 | - | 022 | = |
| 13 | - | 019 | - | 023 | = |
| 14 | - | 020 | - | 024 | = |
| 15 | - | 021 | - | 025 | = 12 |
| 16 | - | 022 | - | 026 | = |
| 17 | - | 023 | - | 027 | = |
| 18 | - | 024 | - | 030 | = |
| 19 | - | 025 | - | 031 | = |
| 1A | - | 026 | - | 032 | = |
| 1B | - | 027 | - | 033 | = |
| 1C | - | 028 | - | 034 | = |
| 1D | - | 029 | - | 035 | = |
| 1E | - | 030 | - | 036 | = |
| 1F | - | 031 | - | 037 | = |
| 20 | - | 032 | - | 040 | = 12 |
| 21 | - | 033 | - | 041 | = 08 |
| 22 | - | 034 | - | 042 | = 09 |
| 23 | - | 035 | - | 043 | = 12 |
| 24 | - | 036 | - | 044 | = 12 |
| 25 | - | 037 | - | 045 | = 12 |
| 26 | - | 038 | - | 046 | = 12 |
| 27 | - | 039 | - | 047 | = 08 |
| 28 | - | 040 | - | 050 | = 08 |
| 29 | - | 041 | - | 051 | = 08 |
| 2A | - | 042 | - | 052 | = 10 |
| 2B | - | 043 | - | 053 | = 10 |
| 2C | - | 044 | - | 054 | = 08 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| 2D | - 045 | - 055 | = | 10 | |
| 2E | - 046 | - 056 | = | 08 | |
| 2F | - 047 | - 057 | = | 12 | |
| 30 | - 048 | - 060 | = | 12 | |
| 31 | - 049 | - 061 | = | 12 | |
| 32 | - 050 | - 062 | = | 12 | |
| 33 | - 051 | - 063 | = | 12 | |
| 34 | - 052 | - 064 | = | 12 | |
| 35 | - 053 | - 065 | = | 12 | |
| 36 | - 054 | - 066 | = | 12 | |
| 37 | - 055 | - 067 | = | 12 | |
| 38 | - 056 | - 070 | = | 12 | |
| 39 | - 057 | - 071 | = | 12 | |
| 3A | - 058 | - 072 | = | 08 | |
| 3B | - 059 | - 073 | = | 08 | |
| 3C | - 060 | - 074 | = | 12 | |
| 3D | - 061 | - 075 | = | 12 | |
| 3E | - 062 | - 076 | = | 12 | |
| 3F | - 063 | - 077 | = | 09 | |
| 40 | - 064 | - 100 | = | 12 | |
| 41 | - 065 | - 101 | = | 12 | |
| 42 | - 066 | - 102 | = | 12 | |
| 43 | - 067 | - 103 | = | 12 | |
| 44 | - 068 | - 104 | = | 12 | |
| 45 | - 069 | - 105 | = | 12 | |
| 46 | - 070 | - 106 | = | 12 | |
| 47 | - 071 | - 107 | = | 12 | |
| 48 | - 072 | - 110 | = | 12 | |
| 49 | - 073 | - 111 | = | 08 | |
| 4A | - 074 | - 112 | = | 12 | |
| 4B | - 075 | - 113 | = | 12 | |
| 4C | - 076 | - 114 | = | 12 | |
| 4D | - 077 | - 115 | = | 12 | |
| 4E | - 078 | - 116 | = | 12 | |
| 4F | - 079 | - 117 | = | 12 | |
| 50 | - 080 | - 120 | = | 12 | |
| 51 | - 081 | - 121 | = | 12 | |
| 52 | - 082 | - 122 | = | 12 | |
| 53 | - 083 | - 123 | = | 12 | |
| 54 | - 084 | - 124 | = | 12 | |
| 55 | - 085 | - 125 | = | 12 | |
| 56 | - 086 | - 126 | = | 12 | |
| 57 | - 087 | - 127 | = | 12 | |
| 58 | - 088 | - 130 | = | 12 | |
| 59 | - 089 | - 131 | = | 12 | |
| 5A | - 090 | - 132 | = | 12 | |
| 5B | - 091 | - 133 | = | 08 | |
| 5C | - 092 | - 134 | = | 12 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|-------------------|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 5D | - 093 | - 135 | = | 08 | |
| 5E | - 094 | - 136 | = | 09 | |
| 5F | - 095 | - 137 | = | 12 | |
| 60 | - 096 | - 140 | = | 08 | |
| 61 | - 097 | - 141 | = | 12 | |
| 62 | - 098 | - 142 | = | 12 | |
| 63 | - 099 | - 143 | = | 12 | |
| 64 | - 100 | - 144 | = | 12 | |
| 65 | - 101 | - 145 | = | 12 | |
| 66 | - 102 | - 146 | = | 10 | |
| 67 | - 103 | - 147 | = | 12 | |
| 68 | - 104 | - 150 | = | 12 | |
| 69 | - 105 | - 151 | = | 08 | |
| 6A | - 106 | - 152 | = | 10 | 9,5 by ML320 STD |
| 6B | - 107 | - 153 | = | 12 | |
| 6C | - 108 | - 154 | = | 09 | |
| 6D | - 109 | - 155 | = | 12 | |
| 6E | - 110 | - 156 | = | 12 | |
| 6F | - 111 | - 157 | = | 12 | |
| 70 | - 112 | - 160 | = | 12 | |
| 71 | - 113 | - 161 | = | 12 | |
| 72 | - 114 | - 162 | = | 12 | |
| 73 | - 115 | - 163 | = | 12 | |
| 74 | - 116 | - 164 | = | 12 | 11,5 by ML320 STD |
| 75 | - 117 | - 165 | = | 12 | |
| 76 | - 118 | - 166 | = | 12 | |
| 77 | - 119 | - 167 | = | 12 | |
| 78 | - 120 | - 170 | = | 12 | |
| 79 | - 121 | - 171 | = | 12 | |
| 7A | - 122 | - 172 | = | 12 | |
| 7B | - 123 | - 173 | = | 08 | |
| 7C | - 124 | - 174 | = | 08 | |
| 7D | - 125 | - 175 | = | 08 | |
| 7E | - 126 | - 176 | = | 11 | |
| 7F | - 127 | - 177 | = | 00 | 12 by ML320 STD |
| 80 | - 128 | - 200 | = | 12 | |
| 81 | - 129 | - 201 | = | 12 | |
| 82 | - 130 | - 202 | = | 12 | |
| 83 | - 131 | - 203 | = | 12 | |
| 84 | - 132 | - 204 | = | 12 | |
| 85 | - 133 | - 205 | = | 12 | |
| 86 | - 134 | - 206 | = | 12 | |
| 87 | - 135 | - 207 | = | 12 | |
| 88 | - 136 | - 210 | = | 12 | |
| 89 | - 137 | - 211 | = | 12 | |
| 8A | - 138 | - 212 | = | 12 | |
| 8B | - 139 | - 213 | = | 09 | |
| 8C | - 140 | - 214 | = | 08 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 8D | - 141 | - 215 | = | 08 | |
| 8E | - 142 | - 216 | = | 12 | |
| 8F | - 143 | - 217 | = | 12 | |
| 90 | - 144 | - 220 | = | 12 | |
| 91 | - 145 | - 221 | = | 12 | |
| 92 | - 146 | - 222 | = | 12 | |
| 93 | - 147 | - 223 | = | 12 | |
| 94 | - 148 | - 224 | = | 10 | |
| 95 | - 149 | - 225 | = | 10 | |
| 96 | - 150 | - 226 | = | 12 | |
| 97 | - 151 | - 227 | = | 12 | |
| 98 | - 152 | - 230 | = | 12 | |
| 99 | - 153 | - 231 | = | 12 | |
| 9A | - 154 | - 232 | = | 12 | |
| 9B | - 155 | - 233 | = | 10 | |
| 9C | - 156 | - 234 | = | 12 | |
| 9D | - 157 | - 235 | = | 12 | |
| 9E | - 158 | - 236 | = | 12 | |
| 9F | - 159 | - 237 | = | 11 | |
| A0 | - 160 | - 240 | = | 12 | |
| A1 | - 161 | - 241 | = | 08 | |
| A2 | - 162 | - 242 | = | 12 | |
| A3 | - 163 | - 243 | = | 12 | |
| A4 | - 164 | - 244 | = | 12 | |
| A5 | - 165 | - 245 | = | 12 | |
| A6 | - 166 | - 246 | = | 12 | |
| A7 | - 167 | - 247 | = | 12 | |
| A8 | - 168 | - 250 | = | 09 | |
| A9 | - 169 | - 251 | = | 12 | |
| AA | - 170 | - 252 | = | 12 | |
| AB | - 171 | - 253 | = | 12 | |
| AC | - 172 | - 254 | = | 12 | |
| AD | - 173 | - 255 | = | 08 | |
| AE | - 174 | - 256 | = | 12 | |
| AF | - 175 | - 257 | = | 12 | |
| B0 | - 176 | - 260 | = | 12 | |
| B1 | - 177 | - 261 | = | 12 | |
| B2 | - 178 | - 262 | = | 12 | |
| B3 | - 179 | - 263 | = | 12 | |
| B4 | - 180 | - 264 | = | 12 | |
| B5 | - 181 | - 265 | = | 12 | |
| B6 | - 182 | - 266 | = | 12 | |
| B7 | - 183 | - 267 | = | 12 | |
| B8 | - 184 | - 270 | = | 12 | |
| B9 | - 185 | - 271 | = | 12 | |
| BA | - 186 | - 272 | = | 12 | |
| BB | - 187 | - 273 | = | 12 | |
| BC | - 188 | - 274 | = | 12 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| BD | - 189 | - 275 | = | 12 | |
| BE | - 190 | - 276 | = | 12 | |
| BF | - 191 | - 277 | = | 12 | |
| C0 | - 192 | - 300 | = | 12 | |
| C1 | - 193 | - 301 | = | 12 | |
| C2 | - 194 | - 302 | = | 12 | |
| C3 | - 195 | - 303 | = | 12 | |
| C4 | - 196 | - 304 | = | 12 | |
| C5 | - 197 | - 305 | = | 12 | |
| C6 | - 198 | - 306 | = | 12 | |
| C7 | - 199 | - 307 | = | 12 | |
| C8 | - 200 | - 310 | = | 12 | |
| C9 | - 201 | - 311 | = | 12 | |
| CA | - 202 | - 312 | = | 12 | |
| CB | - 203 | - 313 | = | 12 | |
| CC | - 204 | - 314 | = | 12 | |
| CD | - 205 | - 315 | = | 12 | |
| CE | - 206 | - 316 | = | 12 | |
| CF | - 207 | - 317 | = | 12 | |
| D0 | - 208 | - 320 | = | 12 | |
| D1 | - 209 | - 321 | = | 12 | |
| D2 | - 210 | - 322 | = | 12 | |
| D3 | - 211 | - 323 | = | 12 | |
| D4 | - 212 | - 324 | = | 12 | |
| D5 | - 213 | - 325 | = | 12 | |
| D6 | - 214 | - 326 | = | 12 | |
| D7 | - 215 | - 327 | = | 12 | |
| D8 | - 216 | - 330 | = | 12 | |
| D9 | - 217 | - 331 | = | 12 | |
| DA | - 218 | - 332 | = | 12 | |
| DB | - 219 | - 333 | = | 12 | |
| DC | - 220 | - 334 | = | 12 | |
| DD | - 221 | - 335 | = | 12 | |
| DE | - 222 | - 336 | = | 12 | |
| DF | - 223 | - 337 | = | 12 | |
| E0 | - 224 | - 340 | = | 11 | |
| E1 | - 225 | - 341 | = | 12 | |
| E2 | - 226 | - 342 | = | 12 | |
| E3 | - 227 | - 343 | = | 10 | |
| E4 | - 228 | - 344 | = | 12 | |
| E5 | - 229 | - 345 | = | 11 | |
| E6 | - 230 | - 346 | = | 12 | |
| E7 | - 231 | - 347 | = | 12 | |
| E8 | - 232 | - 350 | = | 12 | |
| E9 | - 233 | - 351 | = | 10 | |
| EA | - 234 | - 352 | = | 12 | |
| EB | - 235 | - 353 | = | 10 | |
| EC | - 236 | - 354 | = | 12 | |

| CHARACTER CODE | | | | | SETWIDTH | |
|----------------|---|-----|---|-----|----------|--------|
| HEX | | DEC | | OCT | | #/120" |
| ----- | | | | | | |
| ED | - | 237 | - | 355 | = | 12 |
| EE | - | 238 | - | 356 | = | 12 |
| EF | - | 239 | - | 357 | = | 12 |
| F0 | - | 240 | - | 360 | = | 10 |
| F1 | - | 241 | - | 361 | = | 10 |
| F2 | - | 242 | - | 362 | = | 10 |
| F3 | - | 243 | - | 363 | = | 10 |
| F4 | - | 244 | - | 364 | = | 12 |
| F5 | - | 245 | - | 365 | = | 12 |
| F6 | - | 246 | - | 366 | = | 10 |
| F7 | - | 247 | - | 367 | = | 10 |
| F8 | - | 248 | - | 370 | = | 10 |
| F9 | - | 249 | - | 371 | = | 08 |
| FA | - | 250 | - | 372 | = | 08 |
| FB | - | 251 | - | 373 | = | 12 |
| FC | - | 252 | - | 374 | = | 09 |
| FD | - | 253 | - | 375 | = | 08 |
| FE | - | 254 | - | 376 | = | 08 |
| FF | - | 255 | - | 377 | = | 12 |

ISO 320 Graphicprinter Normal

| Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Dec. Code | 35 | 36 | 38 | 48 | 60 | 62 | 64 | 91 | 92 | 93 | 94 | 95 | 96 | 105 | 123 | 124 | 125 | 126 |
| ASCII ESC! n | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ASCII (0) | 64 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 08 | 09 | 12 | 08 | 08 | 08 | 08 | 11 |
| ASCII (0) | 65 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 08 | 09 | 12 | 08 | 08 | 08 | 08 | 11 |
| BRITISH | 66 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 08 | 09 | 12 | 08 | 08 | 08 | 08 | 11 |
| GERMAN | 67 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 09 | 12 | 12 | 08 | 08 | 12 | 10 | 12 |
| FRENCH | 68 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 12 | 09 | 12 | 08 | 08 | 12 | 12 | 12 |
| SWEDISH 1 | 69 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 10 | 12 |
| DANISH | 70 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 08 | 12 | 12 | 12 |
| NORWEGIAN | 71 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 09 | 12 | 08 | 08 | 12 | 12 | 11 |
| DUTCH | 72 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 08 | 09 | 12 | 08 | 08 | 08 | 11 | 08 |
| ITALIAN | 73 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 10 | 12 | 12 | 09 | 12 | 12 | 08 | 12 | 10 | 12 |
| FR-KANADA | 74 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 09 | 12 | 08 | 12 | 12 | 12 |
| SPANISH | 75 | 08 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 12 | 09 | 12 | 12 | 12 | 08 | 12 | 08 | 12 |
| SWEDISH 2 | 76 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 10 | 12 |
| SWEDISH 3 | 77 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 10 | 12 |
| SWEDISH 4 | 78 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 09 | 12 | 12 | 08 | 12 | 10 | 12 |
| Turkish | 79 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 10 | 12 | 12 | 12 | 12 | 08 | 08 | 12 | 12 |
| Swiss 1 | 80 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 09 | 12 | 12 | 08 | 08 | 12 | 12 |
| Swiss 2 | 81 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 09 | 12 | 12 | 08 | 08 | 12 | 12 |
| ----- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

I. Proportional characters: Width Table Firmware:

Proportional Spacing : (ESC % P - ON, ESC % Q - OFF)
Italics : (ESC % G - ON, ESC % H - OFF)

| CHARACTER CODE | | | | | | SETWIDTH |
|----------------|---|-----|---|-----|---|----------|
| HEX | | DEC | | OCT | | #/120" |
| ----- | | | | | | |
| 00 | - | 000 | - | 000 | = | |
| 01 | - | 001 | - | 001 | = | |
| 02 | - | 002 | - | 002 | = | |
| 03 | - | 003 | - | 003 | = | 12 |
| 04 | - | 004 | - | 004 | = | 12 |
| 05 | - | 005 | - | 005 | = | 12 |
| 06 | - | 006 | - | 006 | = | 12 |
| 07 | - | 007 | - | 007 | = | |
| 08 | - | 008 | - | 010 | = | |
| 09 | - | 009 | - | 011 | = | |
| 0A | - | 010 | - | 012 | = | |
| 0B | - | 011 | - | 013 | = | |
| 0C | - | 012 | - | 014 | = | |
| 0D | - | 013 | - | 015 | = | |
| 0E | - | 014 | - | 016 | = | |
| 0F | - | 015 | - | 017 | = | 12 |
| 10 | - | 016 | - | 020 | = | |
| 11 | - | 017 | - | 021 | = | |
| 12 | - | 018 | - | 022 | = | |
| 13 | - | 019 | - | 023 | = | |
| 14 | - | 020 | - | 024 | = | |
| 15 | - | 021 | - | 025 | = | 12 |
| 16 | - | 022 | - | 026 | = | |
| 17 | - | 023 | - | 027 | = | |
| 18 | - | 024 | - | 030 | = | |
| 19 | - | 025 | - | 031 | = | |
| 1A | - | 026 | - | 032 | = | |
| 1B | - | 027 | - | 033 | = | |
| 1C | - | 028 | - | 034 | = | |
| 1D | - | 029 | - | 035 | = | |
| 1E | - | 030 | - | 036 | = | |
| 1F | - | 031 | - | 037 | = | |
| 20 | - | 032 | - | 040 | = | 12 |
| 21 | - | 033 | - | 041 | = | 10 |
| 22 | - | 034 | - | 042 | = | 10 |
| 23 | - | 035 | - | 043 | = | 12 |
| 24 | - | 036 | - | 044 | = | 11 |
| 25 | - | 037 | - | 045 | = | 12 |
| 26 | - | 038 | - | 046 | = | 12 |
| 27 | - | 039 | - | 047 | = | 05 |
| 28 | - | 040 | - | 050 | = | 08 |
| 29 | - | 041 | - | 051 | = | 08 |
| 2A | - | 042 | - | 052 | = | 12 |

| CHARACTER CODE | | | SETWIDTH | | |
|----------------|-------|-------|----------|----|--|
| HEX | DEC | OCT | #/120" | | |
| 2B | - 043 | - 053 | = | 12 | |
| 2C | - 044 | - 054 | = | 08 | |
| 2D | - 045 | - 055 | = | 12 | |
| 2E | - 046 | - 056 | = | 07 | |
| 2F | - 047 | - 057 | = | 10 | |
| 30 | - 048 | - 060 | = | 12 | |
| 31 | - 049 | - 061 | = | 09 | |
| 32 | - 050 | - 062 | = | 12 | |
| 33 | - 051 | - 063 | = | 12 | |
| 34 | - 052 | - 064 | = | 12 | |
| 35 | - 053 | - 065 | = | 12 | |
| 36 | - 054 | - 066 | = | 12 | |
| 37 | - 055 | - 067 | = | 12 | |
| 38 | - 056 | - 070 | = | 12 | |
| 39 | - 057 | - 071 | = | 12 | |
| 3A | - 058 | - 072 | = | 08 | |
| 3B | - 059 | - 073 | = | 09 | |
| 3C | - 060 | - 074 | = | 10 | |
| 3D | - 061 | - 075 | = | 11 | |
| 3E | - 062 | - 076 | = | 09 | |
| 3F | - 063 | - 077 | = | 11 | |
| 40 | - 064 | - 100 | = | 12 | |
| 41 | - 065 | - 101 | = | 12 | |
| 42 | - 066 | - 102 | = | 12 | |
| 43 | - 067 | - 103 | = | 12 | |
| 44 | - 068 | - 104 | = | 12 | |
| 45 | - 069 | - 105 | = | 12 | |
| 46 | - 070 | - 106 | = | 12 | |
| 47 | - 071 | - 107 | = | 12 | |
| 48 | - 072 | - 110 | = | 12 | |
| 49 | - 073 | - 111 | = | 10 | |
| 4A | - 074 | - 112 | = | 12 | |
| 4B | - 075 | - 113 | = | 12 | |
| 4C | - 076 | - 114 | = | 10 | |
| 4D | - 077 | - 115 | = | 12 | |
| 4E | - 078 | - 116 | = | 12 | |
| 4F | - 079 | - 117 | = | 12 | |
| 50 | - 080 | - 120 | = | 12 | |
| 51 | - 081 | - 121 | = | 12 | |
| 52 | - 082 | - 122 | = | 12 | |
| 53 | - 083 | - 123 | = | 12 | |
| 54 | - 084 | - 124 | = | 12 | |
| 55 | - 085 | - 125 | = | 12 | |
| 56 | - 086 | - 126 | = | 11 | |
| 57 | - 087 | - 127 | = | 12 | |
| 58 | - 088 | - 130 | = | 12 | |
| 59 | - 089 | - 131 | = | 12 | |
| 5A | - 090 | - 132 | = | 12 | |
| 5B | - 091 | - 133 | = | 11 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|------------------|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 5C | - 092 | - 134 | = | 07 | |
| 5D | - 093 | - 135 | = | 11 | |
| 5E | - 094 | - 136 | = | 10 | |
| 5F | - 095 | - 137 | = | 12 | |
| 60 | - 096 | - 140 | = | 05 | |
| 61 | - 097 | - 141 | = | 11 | |
| 62 | - 098 | - 142 | = | 11 | |
| 63 | - 099 | - 143 | = | 11 | |
| 64 | - 100 | - 144 | = | 12 | |
| 65 | - 101 | - 145 | = | 11 | |
| 66 | - 102 | - 146 | = | 12 | |
| 67 | - 103 | - 147 | = | 11 | |
| 68 | - 104 | - 150 | = | 11 | |
| 69 | - 105 | - 151 | = | 09 | |
| 6A | - 106 | - 152 | = | 10 | |
| 6B | - 107 | - 153 | = | 11 | |
| 6C | - 108 | - 154 | = | 09 | |
| 6D | - 109 | - 155 | = | 11 | |
| 6E | - 110 | - 156 | = | 10 | |
| 6F | - 111 | - 157 | = | 11 | |
| 70 | - 112 | - 160 | = | 11 | |
| 71 | - 113 | - 161 | = | 11 | |
| 72 | - 114 | - 162 | = | 10 | |
| 73 | - 115 | - 163 | = | 11 | |
| 74 | - 116 | - 164 | = | 10 | |
| 75 | - 117 | - 165 | = | 11 | |
| 76 | - 118 | - 166 | = | 10 | |
| 77 | - 119 | - 167 | = | 12 | |
| 78 | - 120 | - 170 | = | 12 | |
| 79 | - 121 | - 171 | = | 11 | |
| 7A | - 122 | - 172 | = | 12 | |
| 7B | - 123 | - 173 | = | 10 | |
| 7C | - 124 | - 174 | = | 09 | |
| 7D | - 125 | - 175 | = | 10 | |
| 7E | - 126 | - 176 | = | 12 | |
| 7F | - 127 | - 177 | = | 00 | 12 by ML 320 STD |
| 80 | - 128 | - 200 | = | 12 | |
| 81 | - 129 | - 201 | = | 12 | |
| 82 | - 130 | - 202 | = | 11 | |
| 83 | - 131 | - 203 | = | 12 | |
| 84 | - 132 | - 204 | = | 11 | |
| 85 | - 133 | - 205 | = | 11 | |
| 86 | - 134 | - 206 | = | 11 | |
| 87 | - 135 | - 207 | = | 11 | |
| 88 | - 136 | - 210 | = | 12 | |
| 89 | - 137 | - 211 | = | 11 | |
| 8A | - 138 | - 212 | = | 11 | |
| 8B | - 139 | - 213 | = | 10 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 8C | - 140 | - 214 | = | 11 | |
| 8D | - 141 | - 215 | = | 08 | |
| 8E | - 142 | - 216 | = | 12 | |
| 8F | - 143 | - 217 | = | 12 | |
| 90 | - 144 | - 220 | = | 12 | |
| 91 | - 145 | - 221 | = | 12 | |
| 92 | - 146 | - 222 | = | 12 | |
| 93 | - 147 | - 223 | = | 12 | |
| 94 | - 148 | - 224 | = | 11 | |
| 95 | - 149 | - 225 | = | 11 | |
| 96 | - 150 | - 226 | = | 11 | |
| 97 | - 151 | - 227 | = | 11 | |
| 98 | - 152 | - 230 | = | 11 | |
| 99 | - 153 | - 231 | = | 12 | |
| 9A | - 154 | - 232 | = | 12 | |
| 9B | - 155 | - 233 | = | 11 | |
| 9C | - 156 | - 234 | = | 12 | |
| 9D | - 157 | - 235 | = | 12 | |
| 9E | - 158 | - 236 | = | 12 | |
| 9F | - 159 | - 237 | = | 12 | |
| A0 | - 160 | - 240 | = | 11 | |
| A1 | - 161 | - 241 | = | 10 | |
| A2 | - 162 | - 242 | = | 12 | |
| A3 | - 163 | - 243 | = | 11 | |
| A4 | - 164 | - 244 | = | 12 | |
| A5 | - 165 | - 245 | = | 12 | |
| A6 | - 166 | - 246 | = | 11 | |
| A7 | - 167 | - 247 | = | 12 | |
| A8 | - 168 | - 250 | = | 11 | |
| A9 | - 169 | - 251 | = | 12 | |
| AA | - 170 | - 252 | = | 12 | |
| AB | - 171 | - 253 | = | 12 | |
| AC | - 172 | - 254 | = | 12 | |
| AD | - 173 | - 255 | = | 10 | |
| AE | - 174 | - 256 | = | 12 | |
| AF | - 175 | - 257 | = | 12 | |
| B0 | - 176 | - 260 | = | 12 | |
| B1 | - 177 | - 261 | = | 12 | |
| B2 | - 178 | - 262 | = | 12 | |
| B3 | - 179 | - 263 | = | 12 | |
| B4 | - 180 | - 264 | = | 12 | |
| B5 | - 181 | - 265 | = | 12 | |
| B6 | - 182 | - 266 | = | 12 | |
| B7 | - 183 | - 267 | = | 12 | |
| B8 | - 184 | - 270 | = | 12 | |
| B9 | - 185 | - 271 | = | 12 | |
| BA | - 186 | - 272 | = | 12 | |
| BB | - 187 | - 273 | = | 12 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| <i>BC</i> | - 188 | - 274 | = | 12 | |
| <i>BD</i> | - 189 | - 275 | = | 12 | |
| <i>BE</i> | - 190 | - 276 | = | 12 | |
| <i>BF</i> | - 191 | - 277 | = | 12 | |
| <i>C0</i> | - 192 | - 300 | = | 12 | |
| <i>C1</i> | - 193 | - 301 | = | 12 | |
| <i>C2</i> | - 194 | - 302 | = | 12 | |
| <i>C3</i> | - 195 | - 303 | = | 12 | |
| <i>C4</i> | - 196 | - 304 | = | 12 | |
| <i>C5</i> | - 197 | - 305 | = | 12 | |
| <i>C6</i> | - 198 | - 306 | = | 12 | |
| <i>C7</i> | - 199 | - 307 | = | 12 | |
| <i>C8</i> | - 200 | - 310 | = | 12 | |
| <i>C9</i> | - 201 | - 311 | = | 12 | |
| <i>CA</i> | - 202 | - 312 | = | 12 | |
| <i>CB</i> | - 203 | - 313 | = | 12 | |
| <i>CC</i> | - 204 | - 314 | = | 12 | |
| <i>CD</i> | - 205 | - 315 | = | 12 | |
| <i>CE</i> | - 206 | - 316 | = | 12 | |
| <i>CF</i> | - 207 | - 317 | = | 12 | |
| <i>D0</i> | - 208 | - 320 | = | 12 | |
| <i>D1</i> | - 209 | - 321 | = | 12 | |
| <i>D2</i> | - 210 | - 322 | = | 12 | |
| <i>D3</i> | - 211 | - 323 | = | 12 | |
| <i>D4</i> | - 212 | - 324 | = | 12 | |
| <i>D5</i> | - 213 | - 325 | = | 12 | |
| <i>D6</i> | - 214 | - 326 | = | 12 | |
| <i>D7</i> | - 215 | - 327 | = | 12 | |
| <i>D8</i> | - 216 | - 330 | = | 12 | |
| <i>D9</i> | - 217 | - 331 | = | 12 | |
| <i>DA</i> | - 218 | - 332 | = | 12 | |
| <i>DB</i> | - 219 | - 333 | = | 12 | |
| <i>DC</i> | - 220 | - 334 | = | 12 | |
| <i>DD</i> | - 221 | - 335 | = | 12 | |
| <i>DE</i> | - 222 | - 336 | = | 12 | |
| <i>DF</i> | - 223 | - 337 | = | 12 | |
| <i>E0</i> | - 224 | - 340 | = | 12 | |
| <i>E1</i> | - 225 | - 341 | = | 11 | |
| <i>E2</i> | - 226 | - 342 | = | 12 | |
| <i>E3</i> | - 227 | - 343 | = | 12 | |
| <i>E4</i> | - 228 | - 344 | = | 12 | |
| <i>E5</i> | - 229 | - 345 | = | 12 | |
| <i>E6</i> | - 230 | - 346 | = | 12 | |
| <i>E7</i> | - 231 | - 347 | = | 12 | |
| <i>E8</i> | - 232 | - 350 | = | 12 | |
| <i>E9</i> | - 233 | - 351 | = | 12 | |
| <i>EA</i> | - 234 | - 352 | = | 12 | |
| <i>EB</i> | - 235 | - 353 | = | 11 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| EC | - 236 | - 354 | = | 12 | |
| ED | - 237 | - 355 | = | 11 | |
| EE | - 238 | - 356 | = | 10 | |
| EF | - 239 | - 357 | = | 12 | |
| F0 | - 240 | - 360 | = | 12 | |
| F1 | - 241 | - 361 | = | 12 | |
| F2 | - 242 | - 362 | = | 10 | |
| F3 | - 243 | - 363 | = | 10 | |
| F4 | - 244 | - 364 | = | 12 | |
| F5 | - 245 | - 365 | = | 12 | |
| F6 | - 246 | - 366 | = | 12 | |
| F7 | - 247 | - 367 | = | 12 | |
| F8 | - 248 | - 370 | = | 08 | |
| F9 | - 249 | - 371 | = | 06 | |
| FA | - 250 | - 372 | = | 06 | |
| FB | - 251 | - 373 | = | 12 | |
| FC | - 252 | - 374 | = | 08 | |
| FD | - 253 | - 375 | = | 08 | |
| FE | - 254 | - 376 | = | 08 | |
| FF | - 255 | - 377 | = | 12 | |

ISO 320 Graphicprinter Italics (ESC! n)

| Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ----- | | | | | | | | | | | | | | | | | | |
| Dec. Code | 35 | 36 | 38 | 48 | 60 | 62 | 64 | 91 | 92 | 93 | 94 | 95 | 96 | 105 | 123 | 124 | 125 | 126 |
| ----- | | | | | | | | | | | | | | | | | | |
| ASCII ESC! n | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ----- | | | | | | | | | | | | | | | | | | |
| ASCII (0) | 64 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 07 | 11 | 10 | 12 | 05 | 09 | 10 | 09 | 10 |
| ASCII (0) | 65 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 07 | 11 | 10 | 12 | 05 | 09 | 10 | 09 | 10 |
| BRITISH | 66 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 07 | 11 | 10 | 12 | 05 | 09 | 10 | 09 | 10 |
| GERMAN | 67 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 12 | 05 | 09 | 11 | 11 | 12 |
| FRENCH | 68 | 12 | 11 | 12 | 12 | 10 | 09 | 11 | 08 | 11 | 12 | 10 | 12 | 05 | 09 | 11 | 11 | 09 |
| SWEDISH 1 | 69 | 12 | 12 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 12 |
| DANISH | 70 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 05 | 09 | 12 | 11 | 12 |
| NORWEGIAN | 71 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 12 | 12 | 09 | 12 | 11 | 12 |
| DUTCH | 72 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 12 | 11 | 10 | 12 | 05 | 09 | 10 | 12 | 12 |
| ITALIAN | 73 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 08 | 11 | 11 | 10 | 12 | 11 | 09 | 11 | 11 | 08 |
| FR-KANADA | 74 | 12 | 11 | 11 | 12 | 10 | 09 | 11 | 12 | 11 | 12 | 11 | 10 | 12 | 09 | 11 | 11 | 11 |
| SPANISH | 75 | 10 | 11 | 12 | 12 | 10 | 09 | 10 | 12 | 12 | 11 | 12 | 12 | 11 | 09 | 11 | 10 | 12 |
| SWEDISH 2 | 76 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 12 |
| SWEDISH 3 | 77 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 12 |
| SWEDISH 4 | 78 | 12 | 12 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 12 | 11 | 09 | 11 | 11 | 12 |
| Turkish | 79 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 09 | 11 | 12 | 12 | 12 | 11 | 09 | 12 | 12 | 12 |
| Swiss 1 | 80 | 12 | 11 | 12 | 12 | 09 | 10 | 11 | 11 | 11 | 11 | 10 | 12 | 05 | 08 | 11 | 11 | 07 |
| Swiss 2 | 81 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 11 | 11 | 10 | 12 | 05 | 09 | 11 | 11 | 12 |
| ----- | | | | | | | | | | | | | | | | | | |

```
*****
*
* ML 320/321 - 4101/2      Seite: 35/36  *
*
*****
*
* kompatibel mit:
*
* ML 292/3/4 - 4101/2
*
* ML 192/193 - 4101/2
*
*
*
*
*
*
*
*
*
*
*
*****
```

| FUNCTION | COMMENT | ASCII | HEXADECIMAL |
|---------------------------|----------------------|-----------------|------------------|
| ----- | | | |
| CHARACTER SET | | | |
| ===== | | | |
| IBM CHARACTER SET I | | ESC 7 | 1B 37 |
| IBM CHARACTER SET II | | ESC 6 | 1B 36 |
| NATIONAL CHARACTER SET | | ESC ! n | 1B 21 n |
| PRINT FROM ALL CHAR. SET | ONE CHARACTER ONLY | ESC ^ | 1B 5E |
| PRINT FROM ALL CHAR. SET | CONTINUOUSLY | ESC \ n1 n2 | 1B 5C n1 n2 |
| | | | |
| COMPOSITE COMMANDS | | | |
| ===== | | | |
| PRINT MODE SELECTION | | ESC I n | 1B 49 n |
| | | | |
| CUT SHEET FEEDER | | | |
| ===== | | | |
| BIN 1 SELECT | | ESC EM 1 | 1B 19 31 |
| BIN 2 SELECT | | ESC EM 2 | 1B 19 32 |
| CSF EJECT | | ESC EM R | 1B 19 52 |
| CSF INSERT | | ESC EM I | 1B 19 49 |
| | | | |
| DOWNLINE LOADABLE CHR.GEN | | | |
| ===== | | | |
| DESIGNATE DLL NLQ MODE | | ESC I 6 | 1B 49 36 |
| DESIGNATE DLL UTILITYMODE | | ESC I 4 | 1B 49 34 |
| EXIT DLL | START UTILITY MODE | ESC I 0 | 1B 49 30 |
| EXIT DLL | START NLQ MODE | ESC I 2 | 1B 49 32 |
| LOAD PPR DLL CG | | ESC = n1 n2 DC4 | 1B 3D n1 n2 14.. |
| | | | |
| EXECUTION | | | |
| ===== | | | |
| BACKSPACE | | BS | 08 |
| CARRIAGE RETURN | | CR | 0D |
| CLEAR BUFFER | | CAN | 18 |
| FORM FEED | | FF | 0C |
| LINE FEED | | LF | 0A |
| LINE FEED, REVERSE | | ESC] | 1B 5D |
| PRINT SUPPRESS OFF | | DC1 | 11 |
| PRINT SUPPRESS ON (ML320) | NO PRINT UNTIL "DC1" | ESC Q ETX | 1B 51 03 |
| PRINT SUPPRESS ON (ML321) | NO PRINT UNTIL "DC1" | ESC Q SYN | 1B 51 16 |
| VAR. LINE FEED n/216" | ONE LINE ONLY | ESC J n | 1B 4A n |
| | | | |
| FORMATTING | | | |
| ===== | | | |
| CANCEL VTABS,SET HTABS 8. | | ESC R | 1B 52 |
| FORM LENGTH BY INCHES | ALSO SETS TOF | ESC C NUL n | 1B 43 00 n |
| FORM LENGTH BY LINES | ALSO SETS TOF | ESC C n | 1B 43 n |
| HORIZONTAL TABULATOR | | HT | 09 |
| HTABS CLEAR | | ESC D NUL | 1B 44 00 |
| HTABS SET BY CHARACTERS | | ESC D n1-nk NUL | 1B 44 n1-nk 00 |
| INDENTING | PRINT POS. BY DOT | ESC % B.n1-n4 | 1B 25 42 n1-n4 |
| MARGIN SET | BY CHARACTER COLUMNS | ESC X n1 n2 | 1B 58 n1 n2 |
| SKIP OVER PERFORATION | BY LINES | ESC N n | 1B 4E n |

| | | |
|---|--------------------|------------------|
| SKIP OVER PERFORATION OFF | ESC O | 1B 4F |
| TOF SET | ESC 4 | 1B 34 |
| VERTICAL TABULATOR CLEAR | ESC B NUL | 1B 42 00 |
| VERTICAL TABULATOR SET | ESC B n1...n64 NUL | 1B 42 n1..n64 00 |
| VERTICAL TABULATOR SKIP SAME AS LF IF NO TAB VT | | 0B |

GRAPHICS, BIT IMAGE
=====

| | | | |
|---------------------------|--------------|-------------|-------------|
| DENSITY DOUBLE | 120 * 72 DPI | ESC Y n1 n2 | 1B 59 n1 n2 |
| DENSITY DOUBLE HALF SPEED | 120 * 72 DPI | ESC L n1 n2 | 1B 4C n1 n2 |
| DENSITY QUADRUPLE | 240 * 72 DPI | ESC Z n1 n2 | 1B 5A n1 n2 |
| DENSITY SINGLE | 60 * 72 DPI | ESC K n1 n2 | 1B 4B n1 n2 |

| FUNCTION | COMMENT | ASCII | HEXADECIMAL |
|----------|---------|-------|-------------|
|----------|---------|-------|-------------|

LINE SPACING =====

| | | | |
|--------------------------|----------------------|---------|---------|
| 6 LPI | WITHOUT PREV. ESC An | ESC 2 | 1B 32 |
| 8 LPI | | ESC 0 | 1B 30 |
| ACTIVATE ESC A n SPACING | | ESC 2 | 1B 32 |
| LINE SPACING 7/72" | FOR 7 BIT GRAPHICS | ESC 1 | 1B 31 |
| VAR. LINE SPACING n/216" | | ESC 3 n | 1B 33 n |
| VAR. LINE SPACING n/72" | ESC.2 MUST FOLLOW !! | ESC A n | 1B 41 n |

MISCELLANEOUS =====

| | | | |
|----------------------|--|---------|----------|
| AUTO LF OFF | | ESC 5 0 | 1B 35 30 |
| AUTO LF ON | | ESC 5 1 | 1B 35 31 |
| PAPER OUT SENSOR OFF | | ESC 8 | 1B 38 |
| PAPER OUT SENSOR ON | | ESC 9 | 1B 39 |
| PRINT BIDIRECTIONAL | | ESC U 0 | 1B 55 30 |
| PRINT UNIDIRECTIONAL | | ESC U 1 | 1B 55 31 |

PRINT MODE =====

| | | | |
|--------------------------|-----------------------|---------------------|---------------------|
| 10 CPI | PICA | DC2 | 12 |
| 12 CPI | ELITE | ESC : | 1B 3A |
| 17 CPI | FINE | SI | 0F |
| DESIGNATES HSD MODE | | ESC # 0 | 1B 23 30 |
| DESIGNATES NLQ MODE | | ESC I 2 | 1B 49 32 |
| DESIGNATES NLQ MODE | | ESC # 2 | 1B 23 30 |
| DESIGNATES UTILITY MODE | | ESC I 0 | 1B 49 30 |
| DOUBLE HEIGHT CHARACTERS | ALSO DOUBLE WIDTH | ESC [@ n1 n2 m1... | 1B 5B 40 n1 n2 m1.. |
| EMPHASIZED OFF | | ESC F | 1B 46 |
| EMPHASIZED ON | | ESC E | 1B 45 |
| ITALICS (SLANT) OFF | | ESC % H | 1B 25 48 |
| ITALICS (SLANT) ON | | ESC % G | 1B 25 47 |
| NLQ MODE START | | ESC G | 1B 47 |
| NLQ MODE STOP | | ESC H | 1B 48 |
| OVERSCORE OFF | | ESC _ 0 | 1B 5F 30 |
| OVERSCORE ON | | ESC _ 1 | 1B 5F 31 |
| PROPORTIONAL SPACING OFF | | ESC P 0 | 1B 50 30 |
| PROPORTIONAL SPACING ON | | ESC P 1 | 1B 50 31 |
| SPACE BETWEEN CHARACTERS | | ESC V n | 1B 56 n |
| SUBSCRIPT OFF | ALSO SUPERSCRIPIT OFF | ESC T | 1B 54 |
| SUBSCRIPT ON | SOH OR ANY ODD NO. | ESC S 1 | 1B 53 31 |
| SUPERSCRIPIT OFF | ALSO SUBSCRIPT OFF | ESC T | 1B 54 |
| SUPERSCRIPIT ON | NUL OR ANY EVEN NO. | ESC S 0 | 1B 53 30 |
| UNDERLINE OFF | UNDERSCORE | ESC - 0 | 1B 2D 30 |
| UNDERLINE ON | UNDERSCORE | ESC - 1 | 1B 2D 31 |
| WIDTH DOUBLE | FOR ONE LINE ONLY | SO | 0E |
| WIDTH DOUBLE OFF | | ESC W 0 | 1B 57 30 |
| WIDTH DOUBLE OFF | BEFORE END OF LINE | DC4 | 14 |
| WIDTH DOUBLE ON | | ESC W 1 | 1B 57 31 |

IBM vollständig druckbarer Zeichensatz wird gewählt mit:

HEX : 1B 5E n (n = 1 Zeichen) oder 1B 5C n1 n2 (n1,n2 = 0 bis 255)

I. Proportional characters: Width Table Firmware:

Proportional Spacing : (ESC P1 - ON, ESC P0 - OFF)

| CHARACTER CODE | | | | SETWIDTH |
|----------------|-------|-------|---|----------|
| HEX | DEC | OCT | | #/120" |
| ----- | | | | |
| 00 | - 000 | - 000 | = | 12 |
| 01 | - 001 | - 001 | = | 12 |
| 02 | - 002 | - 002 | = | 12 |
| 03 | - 003 | - 003 | = | 12 |
| 04 | - 004 | - 004 | = | 10 |
| 05 | - 005 | - 005 | = | 12 |
| 06 | - 006 | - 006 | = | 12 |
| 07 | - 007 | - 007 | = | 12 |
| 08 | - 008 | - 010 | = | 12 |
| 09 | - 009 | - 011 | = | 12 |
| 0A | - 010 | - 012 | = | 12 |
| 0B | - 011 | - 013 | = | 12 |
| 0C | - 012 | - 014 | = | 12 |
| 0D | - 013 | - 015 | = | 12 |
| 0E | - 014 | - 016 | = | 12 |
| 0F | - 015 | - 017 | = | 12 |
| 10 | - 016 | - 020 | = | 12 |
| 11 | - 017 | - 021 | = | 12 |
| 12 | - 018 | - 022 | = | 12 |
| 13 | - 019 | - 023 | = | 12 |
| 14 | - 020 | - 024 | = | 12 |
| 15 | - 021 | - 025 | = | 12 |
| 16 | - 022 | - 026 | = | 12 |
| 17 | - 023 | - 027 | = | 12 |
| 18 | - 024 | - 030 | = | 12 |
| 19 | - 025 | - 031 | = | 12 |
| 1A | - 026 | - 032 | = | 12 |
| 1B | - 027 | - 033 | = | 12 |
| 1C | - 028 | - 034 | = | 12 |
| 1D | - 029 | - 035 | = | 12 |
| 1E | - 030 | - 036 | = | 12 |
| 1F | - 031 | - 037 | = | 12 |
| 20 | - 032 | - 040 | = | 12 |
| 21 | - 033 | - 041 | = | 05 |
| 22 | - 034 | - 042 | = | 08 |
| 23 | - 035 | - 043 | = | 12 |
| 24 | - 036 | - 044 | = | 12 |
| 25 | - 037 | - 045 | = | 12 |
| 26 | - 038 | - 046 | = | 12 |
| 27 | - 039 | - 047 | = | 06 |

| CHARACTER CODE | | | | | SETWIDTH | |
|----------------|---|-----|---|-----|----------|--------|
| HEX | | DEC | | OCT | | #/120" |
| ----- | | | | | | |
| 28 | - | 040 | - | 050 | = | 06 |
| 29 | - | 041 | - | 051 | = | 06 |
| 2A | - | 042 | - | 052 | = | 12 |
| 2B | - | 043 | - | 053 | = | 12 |
| 2C | - | 044 | - | 054 | = | 06 |
| 2D | - | 045 | - | 055 | = | 12 |
| 2E | - | 046 | - | 056 | = | 06 |
| 2F | - | 047 | - | 057 | = | 10 |
| 30 | - | 048 | - | 060 | = | 12 |
| 31 | - | 049 | - | 061 | = | 08 |
| 32 | - | 050 | - | 062 | = | 12 |
| 33 | - | 051 | - | 063 | = | 12 |
| 34 | - | 052 | - | 064 | = | 12 |
| 35 | - | 053 | - | 065 | = | 12 |
| 36 | - | 054 | - | 066 | = | 12 |
| 37 | - | 055 | - | 067 | = | 12 |
| 38 | - | 056 | - | 070 | = | 12 |
| 39 | - | 057 | - | 071 | = | 12 |
| 3A | - | 058 | - | 072 | = | 06 |
| 3B | - | 059 | - | 073 | = | 06 |
| 3C | - | 060 | - | 074 | = | 10 |
| 3D | - | 061 | - | 075 | = | 12 |
| 3E | - | 062 | - | 076 | = | 10 |
| 3F | - | 063 | - | 077 | = | 10 |
| 40 | - | 064 | - | 100 | = | 12 |
| 41 | - | 065 | - | 101 | = | 12 |
| 42 | - | 066 | - | 102 | = | 12 |
| 43 | - | 067 | - | 103 | = | 12 |
| 44 | - | 068 | - | 104 | = | 12 |
| 45 | - | 069 | - | 105 | = | 12 |
| 46 | - | 070 | - | 106 | = | 12 |
| 47 | - | 071 | - | 107 | = | 12 |
| 48 | - | 072 | - | 110 | = | 12 |
| 49 | - | 073 | - | 111 | = | 08 |
| 4A | - | 074 | - | 112 | = | 12 |
| 4B | - | 075 | - | 113 | = | 12 |
| 4C | - | 076 | - | 114 | = | 12 |
| 4D | - | 077 | - | 115 | = | 12 |
| 4E | - | 078 | - | 116 | = | 12 |
| 4F | - | 079 | - | 117 | = | 12 |
| 50 | - | 080 | - | 120 | = | 12 |
| 51 | - | 081 | - | 121 | = | 12 |
| 52 | - | 082 | - | 122 | = | 12 |
| 53 | - | 083 | - | 123 | = | 12 |
| 54 | - | 084 | - | 124 | = | 12 |
| 55 | - | 085 | - | 125 | = | 12 |
| 56 | - | 086 | - | 126 | = | 12 |
| 57 | - | 087 | - | 127 | = | 12 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 58 | - 088 | - 130 | = | 10 | |
| 59 | - 089 | - 131 | = | 12 | |
| 5A | - 090 | - 132 | = | 12 | |
| 5B | - 091 | - 133 | = | 08 | |
| 5C | - 092 | - 134 | = | 10 | |
| 5D | - 093 | - 135 | = | 08 | |
| 5E | - 094 | - 136 | = | 12 | |
| 5F | - 095 | - 137 | = | 12 | |
| 60 | - 096 | - 140 | = | 06 | |
| 61 | - 097 | - 141 | = | 12 | |
| 62 | - 098 | - 142 | = | 11 | |
| 63 | - 099 | - 143 | = | 11 | |
| 64 | - 100 | - 144 | = | 11 | |
| 65 | - 101 | - 145 | = | 12 | |
| 66 | - 102 | - 146 | = | 12 | |
| 67 | - 103 | - 147 | = | 11 | |
| 68 | - 104 | - 150 | = | 12 | |
| 69 | - 105 | - 151 | = | 08 | |
| 6A | - 106 | - 152 | = | 08 | |
| 6B | - 107 | - 153 | = | 10 | |
| 6C | - 108 | - 154 | = | 08 | |
| 6D | - 109 | - 155 | = | 12 | |
| 6E | - 110 | - 156 | = | 12 | |
| 6F | - 111 | - 157 | = | 11 | |
| 70 | - 112 | - 160 | = | 11 | |
| 71 | - 113 | - 161 | = | 11 | |
| 72 | - 114 | - 162 | = | 11 | |
| 73 | - 115 | - 163 | = | 12 | |
| 74 | - 116 | - 164 | = | 10 | |
| 75 | - 117 | - 165 | = | 12 | |
| 76 | - 118 | - 166 | = | 12 | |
| 77 | - 119 | - 167 | = | 12 | |
| 78 | - 120 | - 170 | = | 10 | |
| 79 | - 121 | - 171 | = | 12 | |
| 7A | - 122 | - 172 | = | 10 | |
| 7B | - 123 | - 173 | = | 09 | |
| 7C | - 124 | - 174 | = | 04 | |
| 7D | - 125 | - 175 | = | 09 | |
| 7E | - 126 | - 176 | = | 12 | |
| 7F | - 127 | - 177 | = | -- | |
| 80 | - 128 | - 200 | = | 12 | |
| 81 | - 129 | - 201 | = | 12 | |
| 82 | - 130 | - 202 | = | 12 | |
| 83 | - 131 | - 203 | = | 12 | |
| 84 | - 132 | - 204 | = | 12 | |
| 85 | - 133 | - 205 | = | 12 | |
| 86 | - 134 | - 206 | = | 12 | |
| 87 | - 135 | - 207 | = | 12 | |

| CHARACTER CODE | | | | | SETWIDTH | |
|----------------|---|-----|---|-----|----------|---------|
| HEX | | DEC | | OCT | | #/120 " |
| ----- | | | | | | |
| 88 | - | 136 | - | 210 | = | 12 |
| 89 | - | 137 | - | 211 | = | 12 |
| 8A | - | 138 | - | 212 | = | 12 |
| 8B | - | 139 | - | 213 | = | 09 |
| 8C | - | 140 | - | 214 | = | 10 |
| 8D | - | 141 | - | 215 | = | 08 |
| 8E | - | 142 | - | 216 | = | 12 |
| 8F | - | 143 | - | 217 | = | 12 |
| 90 | - | 144 | - | 220 | = | 12 |
| 91 | - | 145 | - | 221 | = | 12 |
| 92 | - | 146 | - | 222 | = | 12 |
| 93 | - | 147 | - | 223 | = | 11 |
| 94 | - | 148 | - | 224 | = | 11 |
| 95 | - | 149 | - | 225 | = | 11 |
| 96 | - | 150 | - | 226 | = | 12 |
| 97 | - | 151 | - | 227 | = | 12 |
| 98 | - | 152 | - | 230 | = | 11 |
| 99 | - | 153 | - | 231 | = | 11 |
| 9A | - | 154 | - | 232 | = | 12 |
| 9B | - | 155 | - | 233 | = | 12 |
| 9C | - | 156 | - | 234 | = | 12 |
| 9D | - | 157 | - | 235 | = | 12 |
| 9E | - | 158 | - | 236 | = | 12 |
| 9F | - | 159 | - | 237 | = | 12 |
| A0 | - | 160 | - | 240 | = | 12 |
| A1 | - | 161 | - | 241 | = | 12 |
| A2 | - | 162 | - | 242 | = | 12 |
| A3 | - | 163 | - | 243 | = | 12 |
| A4 | - | 164 | - | 244 | = | 12 |
| A5 | - | 165 | - | 245 | = | 12 |
| A6 | - | 166 | - | 246 | = | 12 |
| A7 | - | 167 | - | 247 | = | 12 |
| A8 | - | 168 | - | 250 | = | 12 |
| A9 | - | 169 | - | 251 | = | 12 |
| AA | - | 170 | - | 252 | = | 12 |
| AB | - | 171 | - | 253 | = | 12 |
| AC | - | 172 | - | 254 | = | 12 |
| AD | - | 173 | - | 255 | = | 12 |
| AE | - | 174 | - | 256 | = | 12 |
| AF | - | 175 | - | 257 | = | 12 |
| B0 | - | 176 | - | 260 | = | 12 |
| B1 | - | 177 | - | 261 | = | 12 |
| B2 | - | 178 | - | 262 | = | 12 |
| B3 | - | 179 | - | 263 | = | 12 |
| B4 | - | 180 | - | 264 | = | 12 |
| B5 | - | 181 | - | 265 | = | 12 |
| B6 | - | 182 | - | 266 | = | 12 |
| B7 | - | 183 | - | 267 | = | 12 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| B8 | - 184 | - 270 | = | 12 | |
| B9 | - 185 | - 271 | = | 12 | |
| BA | - 186 | - 272 | = | 12 | |
| BB | - 187 | - 273 | = | 12 | |
| BC | - 188 | - 274 | = | 12 | |
| BD | - 189 | - 275 | = | 12 | |
| BE | - 190 | - 276 | = | 12 | |
| BF | - 191 | - 277 | = | 12 | |
| C0 | - 192 | - 300 | = | 12 | |
| C1 | - 193 | - 301 | = | 12 | |
| C2 | - 194 | - 302 | = | 12 | |
| C3 | - 195 | - 303 | = | 12 | |
| C4 | - 196 | - 304 | = | 12 | |
| C5 | - 197 | - 305 | = | 12 | |
| C6 | - 198 | - 306 | = | 12 | |
| C7 | - 199 | - 307 | = | 12 | |
| C8 | - 200 | - 310 | = | 12 | |
| C9 | - 201 | - 311 | = | 12 | |
| CA | - 202 | - 312 | = | 12 | |
| CB | - 203 | - 313 | = | 12 | |
| CC | - 204 | - 314 | = | 12 | |
| CD | - 205 | - 315 | = | 12 | |
| CE | - 206 | - 316 | = | 12 | |
| CF | - 207 | - 317 | = | 12 | |
| D0 | - 208 | - 320 | = | 12 | |
| D1 | - 209 | - 321 | = | 12 | |
| D2 | - 210 | - 322 | = | 12 | |
| D3 | - 211 | - 323 | = | 12 | |
| D4 | - 212 | - 324 | = | 12 | |
| D5 | - 213 | - 325 | = | 12 | |
| D6 | - 214 | - 326 | = | 12 | |
| D7 | - 215 | - 327 | = | 12 | |
| D8 | - 216 | - 330 | = | 12 | |
| D9 | - 217 | - 331 | = | 12 | |
| DA | - 218 | - 332 | = | 12 | |
| DB | - 219 | - 333 | = | 12 | |
| DC | - 220 | - 334 | = | 12 | |
| DD | - 221 | - 335 | = | 12 | |
| DE | - 222 | - 336 | = | 12 | |
| DF | - 223 | - 337 | = | 12 | |
| E0 | - 224 | - 340 | = | 12 | |
| E1 | - 225 | - 341 | = | 12 | |
| E2 | - 226 | - 342 | = | 11 | |
| E3 | - 227 | - 343 | = | 12 | |
| E4 | - 228 | - 344 | = | 12 | |
| E5 | - 229 | - 345 | = | 12 | |
| E6 | - 230 | - 346 | = | 12 | |
| E7 | - 231 | - 347 | = | 11 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|---|-----|-----|----------|--------|
| HEX | | DEC | OCT | | #/120" |
| ----- | | | | | |
| E8 | - | 232 | - | 350 | = 12 |
| E9 | - | 233 | - | 351 | = 12 |
| EA | - | 234 | - | 352 | = 12 |
| EB | - | 235 | - | 353 | = 12 |
| EC | - | 236 | - | 354 | = 12 |
| ED | - | 237 | - | 355 | = 12 |
| EE | - | 238 | - | 356 | = 10 |
| EF | - | 239 | - | 357 | = 12 |
| F0 | - | 240 | - | 360 | = 12 |
| F1 | - | 241 | - | 361 | = 12 |
| F2 | - | 242 | - | 362 | = 10 |
| F3 | - | 243 | - | 363 | = 10 |
| F4 | - | 244 | - | 364 | = 12 |
| F5 | - | 245 | - | 365 | = 12 |
| F6 | - | 246 | - | 366 | = 12 |
| F7 | - | 247 | - | 367 | = 11 |
| F8 | - | 248 | - | 370 | = 08 |
| F9 | - | 249 | - | 371 | = 06 |
| FA | - | 250 | - | 372 | = 06 |
| FB | - | 251 | - | 373 | = 12 |
| FC | - | 252 | - | 374 | = 10 |
| FD | - | 253 | - | 375 | = 08 |
| FE | - | 254 | - | 376 | = 08 |
| FF | - | 255 | - | 377 | = 12 |

ISO 320 Proprinter Normal

| Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | |
|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Dec. Code | 35 | 36 | 38 | 48 | 60 | 62 | 64 | 91 | 92 | 93 | 94 | 95 | 96 | 105 | 123 | 124 | 125 | 126 | |
| ASCII ESC! n | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| ASCII (0) | 64 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 10 | 08 | 12 | 12 | 06 | 08 | 09 | 04 | 09 | 12 |
| ASCII (O) | 65 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 10 | 08 | 12 | 12 | 06 | 08 | 09 | 04 | 09 | 12 |
| BRITISH | 66 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 10 | 08 | 12 | 12 | 06 | 08 | 09 | 04 | 09 | 12 |
| GERMAN | 67 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 11 | 12 | 12 | 12 | 06 | 08 | 12 | 11 | 12 | 12 |
| FRENCH | 68 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 12 | 12 | 12 | 12 | 06 | 08 | 12 | 12 | 12 | 12 |
| SWEDISH 1 | 69 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 11 | 12 | 12 | 12 | 12 | 08 | 12 | 11 | 12 | 12 |
| DANISH | 70 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 06 | 08 | 12 | 12 | 12 | 12 |
| NORWEGIAN | 71 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 08 | 12 | 12 | 12 | 12 |
| DUTCH | 72 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 12 | 08 | 12 | 12 | 06 | 08 | 09 | 11 | 09 | 12 |
| ITALIAN | 73 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 11 | 12 | 08 |
| FR-KANADA | 74 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 10 | 09 | 11 | 08 | 12 | 12 | 12 | 12 |
| SPANISH | 75 | 05 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 12 | 12 | 12 |
| SWEDISH 2 | 76 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 11 | 12 | 12 | 12 | 12 | 08 | 12 | 11 | 12 | 12 |
| SWEDISH 3 | 77 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 11 | 12 | 12 | 12 | 12 | 08 | 12 | 11 | 12 | 12 |
| SWEDISH 4 | 78 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 11 | 12 | 12 | 12 | 12 | 08 | 12 | 11 | 12 | 12 |
| Turkish | 79 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 11 | 12 | 12 | 12 | 12 | 08 | 08 | 11 | 12 | 12 |
| Swiss 1 | 80 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 06 | 08 | 12 | 11 | 12 | 10 |
| Swiss 2 | 81 | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 06 | 08 | 12 | 11 | 12 | 12 |
| ----- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

I. Proportional characters: Width Table Firmware:

Proportional Spacing : (ESC P1 - ON, ESC P0 - OFF)
 Italics : (ESC % G - ON, ESC % H - OFF)

| CHARACTER CODE | | | | | | SETWIDTH |
|----------------|---|-----|---|-----|---|----------|
| HEX | | DEC | | OCT | | #/120" |
| ----- | | | | | | |
| 00 | - | 000 | - | 000 | = | 12 |
| 01 | - | 001 | - | 001 | = | 12 |
| 02 | - | 002 | - | 002 | = | 12 |
| 03 | - | 003 | - | 003 | = | 12 |
| 04 | - | 004 | - | 004 | = | 12 |
| 05 | - | 005 | - | 005 | = | 12 |
| 06 | - | 006 | - | 006 | = | 12 |
| 07 | - | 007 | - | 007 | = | 12 |
| 08 | - | 008 | - | 010 | = | 12 |
| 09 | - | 009 | - | 011 | = | 12 |
| 0A | - | 010 | - | 012 | = | 12 |
| 0B | - | 011 | - | 013 | = | 12 |
| 0C | - | 012 | - | 014 | = | 12 |
| 0D | - | 013 | - | 015 | = | 12 |
| 0E | - | 014 | - | 016 | = | 12 |
| 0F | - | 015 | - | 017 | = | 12 |
| 10 | - | 016 | - | 020 | = | 12 |
| 11 | - | 017 | - | 021 | = | 12 |
| 12 | - | 018 | - | 022 | = | 12 |
| 13 | - | 019 | - | 023 | = | 12 |
| 14 | - | 020 | - | 024 | = | 12 |
| 15 | - | 021 | - | 025 | = | 12 |
| 16 | - | 022 | - | 026 | = | 12 |
| 17 | - | 023 | - | 027 | = | 12 |
| 18 | - | 024 | - | 030 | = | 12 |
| 19 | - | 025 | - | 031 | = | 12 |
| 1A | - | 026 | - | 032 | = | 12 |
| 1B | - | 027 | - | 033 | = | 12 |
| 1C | - | 028 | - | 034 | = | 12 |
| 1D | - | 029 | - | 035 | = | 12 |
| 1E | - | 030 | - | 036 | = | 12 |
| 1F | - | 031 | - | 037 | = | 12 |
| 20 | - | 032 | - | 040 | = | 12 |
| 21 | - | 033 | - | 041 | = | 10 |
| 22 | - | 034 | - | 042 | = | 10 |
| 23 | - | 035 | - | 043 | = | 12 |
| 24 | - | 036 | - | 044 | = | 11 |
| 25 | - | 037 | - | 045 | = | 12 |
| 26 | - | 038 | - | 046 | = | 12 |
| 27 | - | 039 | - | 047 | = | 05 |
| 28 | - | 040 | - | 050 | = | 08 |
| 29 | - | 041 | - | 051 | = | 08 |
| 2A | - | 042 | - | 052 | = | 12 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 2B | - 043 | - 053 | = | 12 | |
| 2C | - 044 | - 054 | = | 08 | |
| 2D | - 045 | - 055 | = | 12 | |
| 2E | - 046 | - 056 | = | 07 | |
| 2F | - 047 | - 057 | = | 10 | |
| 30 | - 048 | - 060 | = | 12 | |
| 31 | - 049 | - 061 | = | 09 | |
| 32 | - 050 | - 062 | = | 12 | |
| 33 | - 051 | - 063 | = | 12 | |
| 34 | - 052 | - 064 | = | 12 | |
| 35 | - 053 | - 065 | = | 12 | |
| 36 | - 054 | - 066 | = | 12 | |
| 37 | - 055 | - 067 | = | 12 | |
| 38 | - 056 | - 070 | = | 12 | |
| 39 | - 057 | - 071 | = | 12 | |
| 3A | - 058 | - 072 | = | 08 | |
| 3B | - 059 | - 073 | = | 09 | |
| 3C | - 060 | - 074 | = | 10 | |
| 3D | - 061 | - 075 | = | 11 | |
| 3E | - 062 | - 076 | = | 08 | |
| 3F | - 063 | - 077 | = | 11 | |
| 40 | - 064 | - 100 | = | 12 | |
| 41 | - 065 | - 101 | = | 12 | |
| 42 | - 066 | - 102 | = | 12 | |
| 43 | - 067 | - 103 | = | 12 | |
| 44 | - 068 | - 104 | = | 12 | |
| 45 | - 069 | - 105 | = | 12 | |
| 46 | - 070 | - 106 | = | 12 | |
| 47 | - 071 | - 107 | = | 12 | |
| 48 | - 072 | - 110 | = | 12 | |
| 49 | - 073 | - 111 | = | 10 | |
| 4A | - 074 | - 112 | = | 12 | |
| 4B | - 075 | - 113 | = | 12 | |
| 4C | - 076 | - 114 | = | 10 | |
| 4D | - 077 | - 115 | = | 12 | |
| 4E | - 078 | - 116 | = | 12 | |
| 4F | - 079 | - 117 | = | 12 | |
| 50 | - 080 | - 120 | = | 12 | |
| 51 | - 081 | - 121 | = | 12 | |
| 52 | - 082 | - 122 | = | 12 | |
| 53 | - 083 | - 123 | = | 12 | |
| 54 | - 084 | - 124 | = | 12 | |
| 55 | - 085 | - 125 | = | 12 | |
| 56 | - 086 | - 126 | = | 11 | |
| 57 | - 087 | - 127 | = | 12 | |
| 58 | - 088 | - 130 | = | 12 | |
| 59 | - 089 | - 131 | = | 12 | |
| 5A | - 090 | - 132 | = | 12 | |

| CHARACTER CODE | | | | | SETWIDTH | |
|----------------|-----|-----|---------|-----|----------|----|
| HEX | DEC | OCT | #/120 " | | | |
| ----- | | | | | | |
| 5B | - | 091 | - | 133 | = | 11 |
| 5C | - | 092 | - | 134 | = | 07 |
| 5D | - | 093 | - | 135 | = | 11 |
| 5E | - | 094 | - | 136 | = | 10 |
| 5F | - | 095 | - | 137 | = | 12 |
| 60 | - | 096 | - | 140 | = | 05 |
| 61 | - | 097 | - | 141 | = | 11 |
| 62 | - | 098 | - | 142 | = | 11 |
| 63 | - | 099 | - | 143 | = | 11 |
| 64 | - | 100 | - | 144 | = | 12 |
| 65 | - | 101 | - | 145 | = | 11 |
| 66 | - | 102 | - | 146 | = | 12 |
| 67 | - | 103 | - | 147 | = | 11 |
| 68 | - | 104 | - | 150 | = | 11 |
| 69 | - | 105 | - | 151 | = | 09 |
| 6A | - | 106 | - | 152 | = | 10 |
| 6B | - | 107 | - | 153 | = | 11 |
| 6C | - | 108 | - | 154 | = | 09 |
| 6D | - | 109 | - | 155 | = | 11 |
| 6E | - | 110 | - | 156 | = | 10 |
| 6F | - | 111 | - | 157 | = | 11 |
| 70 | - | 112 | - | 160 | = | 11 |
| 71 | - | 113 | - | 161 | = | 11 |
| 72 | - | 114 | - | 162 | = | 10 |
| 73 | - | 115 | - | 163 | = | 11 |
| 74 | - | 116 | - | 164 | = | 10 |
| 75 | - | 117 | - | 165 | = | 11 |
| 76 | - | 118 | - | 166 | = | 10 |
| 77 | - | 119 | - | 167 | = | 12 |
| 78 | - | 120 | - | 170 | = | 12 |
| 79 | - | 121 | - | 171 | = | 11 |
| 7A | - | 122 | - | 172 | = | 12 |
| 7B | - | 123 | - | 173 | = | 10 |
| 7C | - | 124 | - | 174 | = | 09 |
| 7D | - | 125 | - | 175 | = | 10 |
| 7E | - | 126 | - | 176 | = | 12 |
| 7F | - | 127 | - | 177 | = | -- |
| 80 | - | 128 | - | 200 | = | 12 |
| 81 | - | 129 | - | 201 | = | 12 |
| 82 | - | 130 | - | 202 | = | 11 |
| 83 | - | 131 | - | 203 | = | 12 |
| 84 | - | 132 | - | 204 | = | 11 |
| 85 | - | 133 | - | 205 | = | 11 |
| 86 | - | 134 | - | 206 | = | 11 |
| 87 | - | 135 | - | 207 | = | 11 |
| 88 | - | 136 | - | 210 | = | 12 |
| 89 | - | 137 | - | 211 | = | 11 |
| 8A | - | 138 | - | 212 | = | 11 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 8B | - 139 | - 213 | = | 10 | |
| 8C | - 140 | - 214 | = | 11 | |
| 8D | - 141 | - 215 | = | 08 | |
| 8E | - 142 | - 216 | = | 12 | |
| 8F | - 143 | - 217 | = | 12 | |
| 90 | - 144 | - 220 | = | 12 | |
| 91 | - 145 | - 221 | = | 12 | |
| 92 | - 146 | - 222 | = | 12 | |
| 93 | - 147 | - 223 | = | 12 | |
| 94 | - 148 | - 224 | = | 11 | |
| 95 | - 149 | - 225 | = | 11 | |
| 96 | - 150 | - 226 | = | 11 | |
| 97 | - 151 | - 227 | = | 11 | |
| 98 | - 152 | - 230 | = | 11 | |
| 99 | - 153 | - 231 | = | 12 | |
| 9A | - 154 | - 232 | = | 12 | |
| 9B | - 155 | - 233 | = | 11 | |
| 9C | - 156 | - 234 | = | 12 | |
| 9D | - 157 | - 235 | = | 12 | |
| 9E | - 158 | - 236 | = | 12 | |
| 9F | - 159 | - 237 | = | 12 | |
| A0 | - 160 | - 240 | = | 11 | |
| A1 | - 161 | - 241 | = | 10 | |
| A2 | - 162 | - 242 | = | 12 | |
| A3 | - 163 | - 243 | = | 11 | |
| A4 | - 164 | - 244 | = | 12 | |
| A5 | - 165 | - 245 | = | 12 | |
| A6 | - 166 | - 246 | = | 11 | |
| A7 | - 167 | - 247 | = | 12 | |
| A8 | - 168 | - 250 | = | 11 | |
| A9 | - 169 | - 251 | = | 12 | |
| AA | - 170 | - 252 | = | 12 | |
| AB | - 171 | - 253 | = | 12 | |
| AC | - 172 | - 254 | = | 12 | |
| AD | - 173 | - 255 | = | 10 | |
| AE | - 174 | - 256 | = | 12 | |
| AF | - 175 | - 257 | = | 12 | |
| B0 | - 176 | - 260 | = | 12 | |
| B1 | - 177 | - 261 | = | 12 | |
| B2 | - 178 | - 262 | = | 12 | |
| B3 | - 179 | - 263 | = | 12 | |
| B4 | - 180 | - 264 | = | 12 | |
| B5 | - 181 | - 265 | = | 12 | |
| B6 | - 182 | - 266 | = | 12 | |
| B7 | - 183 | - 267 | = | 12 | |
| B8 | - 184 | - 270 | = | 12 | |
| B9 | - 185 | - 271 | = | 12 | |
| BA | - 186 | - 272 | = | 12 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| BB | - 187 | - 273 | = | 12 | |
| BC | - 188 | - 274 | = | 12 | |
| BD | - 189 | - 275 | = | 12 | |
| BE | - 190 | - 276 | = | 12 | |
| BF | - 191 | - 277 | = | 12 | |
| C0 | - 192 | - 300 | = | 12 | |
| C1 | - 193 | - 301 | = | 12 | |
| C2 | - 194 | - 302 | = | 12 | |
| C3 | - 195 | - 303 | = | 12 | |
| C4 | - 196 | - 304 | = | 12 | |
| C5 | - 197 | - 305 | = | 12 | |
| C6 | - 198 | - 306 | = | 12 | |
| C7 | - 199 | - 307 | = | 12 | |
| C8 | - 200 | - 310 | = | 12 | |
| C9 | - 201 | - 311 | = | 12 | |
| CA | - 202 | - 312 | = | 12 | |
| CB | - 203 | - 313 | = | 12 | |
| CC | - 204 | - 314 | = | 12 | |
| CD | - 205 | - 315 | = | 12 | |
| CE | - 206 | - 316 | = | 12 | |
| CF | - 207 | - 317 | = | 12 | |
| D0 | - 208 | - 320 | = | 12 | |
| D1 | - 209 | - 321 | = | 12 | |
| D2 | - 210 | - 322 | = | 12 | |
| D3 | - 211 | - 323 | = | 12 | |
| D4 | - 212 | - 324 | = | 12 | |
| D5 | - 213 | - 325 | = | 12 | |
| D6 | - 214 | - 326 | = | 12 | |
| D7 | - 215 | - 327 | = | 12 | |
| D8 | - 216 | - 330 | = | 12 | |
| D9 | - 217 | - 331 | = | 12 | |
| DA | - 218 | - 332 | = | 12 | |
| DB | - 219 | - 333 | = | 12 | |
| DC | - 220 | - 334 | = | 12 | |
| DD | - 221 | - 335 | = | 12 | |
| DE | - 222 | - 336 | = | 12 | |
| DF | - 223 | - 337 | = | 12 | |
| E0 | - 224 | - 340 | = | 12 | |
| E1 | - 225 | - 341 | = | 11 | |
| E2 | - 226 | - 342 | = | 12 | |
| E3 | - 227 | - 343 | = | 12 | |
| E4 | - 228 | - 344 | = | 12 | |
| E5 | - 229 | - 345 | = | 12 | |
| E6 | - 230 | - 346 | = | 12 | |
| E7 | - 231 | - 347 | = | 12 | |
| E8 | - 232 | - 350 | = | 12 | |
| E9 | - 233 | - 351 | = | 12 | |
| EA | - 234 | - 352 | = | 12 | |

| CHARACTER CODE | | | | | SETWIDTH | |
|----------------|---|-----|---|-----|----------|---------|
| HEX | | DEC | | OCT | | #/120 " |
| ----- | | | | | | |
| EB | - | 235 | - | 353 | = | 11 |
| EC | - | 236 | - | 354 | = | 12 |
| ED | - | 237 | - | 355 | = | 11 |
| EE | - | 238 | - | 356 | = | 10 |
| EF | - | 239 | - | 357 | = | 12 |
| F0 | - | 240 | - | 360 | = | 12 |
| F1 | - | 241 | - | 361 | = | 12 |
| F2 | - | 242 | - | 362 | = | 10 |
| F3 | - | 243 | - | 363 | = | 10 |
| F4 | - | 244 | - | 364 | = | 12 |
| F5 | - | 245 | - | 365 | = | 12 |
| F6 | - | 246 | - | 366 | = | 12 |
| F7 | - | 247 | - | 367 | = | 12 |
| F8 | - | 248 | - | 370 | = | 08 |
| F9 | - | 249 | - | 371 | = | 06 |
| FA | - | 250 | - | 372 | = | 06 |
| FB | - | 251 | - | 373 | = | 12 |
| FC | - | 252 | - | 374 | = | 08 |
| FD | - | 253 | - | 375 | = | 08 |
| FE | - | 254 | - | 376 | = | 08 |
| FF | - | 255 | - | 377 | = | 12 |

ISO 320 Proprinter Italics

| Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ----- | | | | | | | | | | | | | | | | | | |
| Dec. Code | 35 | 36 | 38 | 48 | 60 | 62 | 64 | 91 | 92 | 93 | 94 | 95 | 96 | 105 | 123 | 124 | 125 | 126 |
| ----- | | | | | | | | | | | | | | | | | | |
| ASCII ESC! n | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ----- | | | | | | | | | | | | | | | | | | |
| ASCII (0) | 64 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 07 | 11 | 10 | 12 | 05 | 09 | 10 | 09 | 10 |
| ASCII (0) | 65 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 07 | 11 | 10 | 12 | 05 | 09 | 10 | 09 | 10 |
| BRITISH | 66 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 07 | 11 | 10 | 12 | 05 | 09 | 10 | 09 | 10 |
| GERMAN | 67 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 12 | 05 | 09 | 11 | 11 | 12 |
| FRENCH | 68 | 12 | 11 | 12 | 12 | 10 | 09 | 11 | 08 | 11 | 12 | 10 | 12 | 05 | 09 | 11 | 11 | 09 |
| SWEDISH 1 | 69 | 12 | 12 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 12 |
| DANISH | 70 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 05 | 09 | 12 | 11 | 12 |
| NORWEGIAN | 71 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 12 | 12 | 09 | 12 | 11 | 12 |
| DUTCH | 72 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 12 | 11 | 10 | 12 | 05 | 09 | 10 | 12 | 12 |
| ITALIAN | 73 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 08 | 11 | 11 | 10 | 12 | 11 | 09 | 11 | 11 | 08 |
| FR-KANADA | 74 | 12 | 11 | 11 | 12 | 10 | 09 | 11 | 12 | 11 | 12 | 11 | 10 | 12 | 09 | 11 | 11 | 11 |
| SPANISH | 75 | 10 | 11 | 12 | 12 | 10 | 09 | 10 | 12 | 12 | 11 | 12 | 12 | 11 | 09 | 11 | 10 | 12 |
| SWEDISH 2 | 76 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 12 |
| SWEDISH 3 | 77 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 12 |
| SWEDISH 4 | 78 | 12 | 12 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 12 | 11 | 09 | 11 | 11 | 12 |
| Turkish | 79 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 09 | 11 | 12 | 12 | 12 | 11 | 09 | 12 | 12 | 12 |
| Swiss 1 | 80 | 12 | 11 | 12 | 12 | 09 | 10 | 11 | 11 | 11 | 11 | 10 | 12 | 05 | 09 | 11 | 11 | 07 |
| Swiss 2 | 81 | 12 | 11 | 12 | 12 | 10 | 09 | 12 | 11 | 11 | 11 | 10 | 12 | 05 | 09 | 11 | 11 | 12 |
| ----- | | | | | | | | | | | | | | | | | | |

```
*****
*
*   ML 320/321 - EPSON           Seite: 51/52
*
*****
*
*   kompatibel mit:
*
*   ML 292/3/4 - EPSON FX
*
*   ML 192/193 - EPSON FX
*
*
*
*
*
*
*
*
*
*
*****
```

| FUNCTION | COMMENT | ASCII | HEXADECIMAL |
|---------------------------|----------------------|----------------------|----------------------|
| ----- | | | |
| CHARACTER SET | | | |
| ===== | | | |
| CODE EXPANSION OFF | 128-159+255 CONTROLS | ESC 7 | 1B 37 |
| CODE EXPANSION ON | 128-159+255 PRINTABL | ESC 6 | 1B 36 |
| NATIONAL CHARACTER SET | | ESC R n | 1B 52 n |
| UNASSIGNED CODE PRINT OFF | 0-31+128-159 CONTROL | ESC I 0 | 1B 49 30 |
| UNASSIGNED CODE PRINT ON | 0-31+128-159PRINTABL | ESC I 1 | 1B 49 31 |
| | | | |
| COMPOSITE COMMANDS | | | |
| ===== | | | |
| PRINT MODE SELECTION | | ESC ! n | 1B 21 n |
| | | | |
| CUT SHEET FEEDER | | | |
| ===== | | | |
| BIN 1 SELECT | | ESC EM 1 | 1B 19 31 |
| BIN 2 SELECT | | ESC EM 2 | 1B 19 32 |
| EJECT SINGLE SHEET | | ESC EM R | 1B 19 52 |
| INSERT SINGLE SHEET | | ESC EM I | 1B 19 49 |
| | | | |
| DOWNLINE LOADABLE CHR.GEN | | | |
| ===== | | | |
| COPY STD SET TO DLL CG | | ESC : NUL NUL NUL | 1B 3A 00 00 00 |
| DESIGNATES DLL CHR.SET | | ESC % SOH NUL | 1B 25 01 00 |
| EXIT DLL | TO DP-MODE | ESC % NUL NUL | 1B 25 00 00 |
| LOAD DLL CHARACTER | | ESC & NUL n m a pl.. | 1B 26 00 n m a pl... |
| | | | |
| EXECUTION | | | |
| ===== | | | |
| BACKSPACE | | BS | 08 |
| CARRIAGE RETURN | | CR | 0D |
| CLEAR BUFFER | | CAN | 18 |
| CLEAR BUFFER/MASTER RESET | | ESC @ | 1B 40 |
| DELETE LAST CHARACTER | IN BUFFER | DEL | 7F |
| FORM FEED | | FF | 0C |
| LF WITHOUT CR | PRINT DATA | ESC DC2 | 1B 12 |
| LINE FEED | | LF | 0A |
| PRINT SUPPRESS OFF | | DC1 | 11 |
| PRINT SUPPRESS ON | NO PRINT UNTIL "DC1" | DC3 | 13 |
| VAR. LINE FEED n/216" | n = 1 TO 255 | ESC J n | 1B 4A n |
| VAR. REV.LINE FEED n/216" | n = 1-255, 80 c only | ESC j n | 1B 6A n |
| | | | |
| FORMATTING | | | |
| ===== | | | |
| DOT POSITION ABSOLUTE | IN 1/60" UNITS | ESC \$ n1 n2 | 1B 24 n1 n2 |
| DOT POSITION RELATIVE | IN 1/120" UNITS | ESC \ n1 n2 | 1B 5C n1 n2 |
| FORM LENGTH BY INCHES | n = 1 TO 22 | ESC C NUL n | 1B 43 00 n |
| FORM LENGTH BY LINES | n = 1 - 127 | ESC C n | 1B 43 n |
| HORIZONTAL TABULATOR SKIP | | HT | 09 |
| HTABS CLEAR | | ESC D NUL | 1B 44 00 |
| HTABS SET BY CHARACTERS | | ESC D n1...n32 NUL | 1B 44 n1...n32 00 |
| MARGIN SET LEFT | | ESC l n | 1B 6C n |

| | | | |
|---------------------------|----------------------|---------------------|--------------------|
| MARGIN SET RIGHT | | ESC Q n | 1B 51 n |
| SKIP OVER PERFORATION | n=1 TO 127 LINES | ESC N n | 1B 4E n |
| SKIP OVER PERFORATION OFF | | ESC O | 1B 4F |
| VERTICAL TABULATOR CANCEL | | ESC B NUL | 1B 42 00 |
| VERTICAL TABULATOR SET | | ESC B n1...n16 NUL | 1B 42 n1...n16 00 |
| VERTICAL TABULATOR SKIP | SAME AS LF IF NO TAB | VT | 0B |
| VFU CHANNEL SELECT | n = 0 to 7 | ESC / n | 1B 2F n |
| VFU LOAD | k = 1 to 16 | ESC b n m1...mk NUL | 1B 62 n m1...mk 00 |

| FUNCTION | COMMENT | ASCII | HEXADECIMAL |
|---|----------------------|---------------------|---------------------|
| ----- | | | |
| GRAPHICS BIT IMAGE | | | |
| ===== | | | |
| DENSITY DOUBLE | 120 * 72 DPI | ESC Y | 1B 59 |
| DENSITY DOUBLE, HALF SPEED | 120 * 72 DPI | ESC L | 1B 4C |
| DENSITY QUADRUPLE | 240 * 72 DPI | ESC Z | 1B 5A |
| DENSITY SINGLE | 60 * 72 DPI | ESC K | 1B 48 |
| REASSIGN GRAPHICS MODE | ESC * TO ESC K,L,Y,Z | ESC ? s n | 1B 3F s n |
| SELECT 8 BIT GRAPHICS | | ESC * m n1 n2 v1-vk | 1B 2A m n1 n2 v1-vk |
| SELECT 9 BIT GRAPHICS | SINGLE + DOUBLE DENS | ESC ^ a n1 n2 v... | 1B 5E a n1 n2 v... |
| | | | |
| LINE SPACING | | | |
| ===== | | | |
| 6 LPI | | ESC 2 | 1B 32 |
| 8 LPI | | ESC 0 | 1B 30 |
| LINE SPACING 7/72" | FOR 7 BIT GRAPHICS | ESC 1 | 1B 31 |
| VAR. LINE SPACING n/216" | n = 0 TO 255 | ESC 3 n | 1B 33 n |
| VAR. LINE SPACING n/72" | n = 0 TO 85 | ESC A n | 1B 41 n |
| | | | |
| MISCELLANEOUS | | | |
| ===== | | | |
| HALF SPEED PRINTING OFF | | ESC s 0 | 1B 73 30 |
| HALF SPEED PRINTING ON | | ESC s 1 | 1B 73 31 |
| MSB SET 0 | | ESC = | 1B 3D |
| MSB SET 1 | | ESC > | 1B 3E |
| MSB SETTING CANCEL | | ESC # | 1B 23 |
| PAPER OUT SENSOR OFF | | ESC 8 | 1B 38 |
| PAPER OUT SENSOR ON | | ESC 9 | 1B 39 |
| UNIDIRECTIONAL PRINT OFF | | ESC U 0 | 1B 55 30 |
| UNIDIRECTIONAL PRINT ON | | ESC U 1 | 1B 55 31 |
| UNIDIR. PRINT (HOME HEAD) FOR ONE LINE ONLY | | ESC < | 1B 3C |
| | | | |
| PRINT MODE | | | |
| ===== | | | |
| 10 CPI | PICA | ESC P | 1B 50 |
| 12 CPI | ELITE | ESC M | 1B 4D |
| CONDENSED MODE RESET | 20=>12, 17=>10 CPI | DC2 | 12 |
| CONDENSED MODE SET | 10=>17, 12=>20 CPI | SI | 0F |
| CONDENSED MODE SET | 10=>17, 12=>20 CPI | ESC SI | 1B 0F |
| DESIGNATES HSD MODE | | ESC (0 | 1B 28 30 |
| DESIGNATES NLQ MODE | LQ WITH 24 PINS | ESC x SOH | 1B 78 01 |
| DESIGNATES UTILITY MODE | | ESC x NUL | 1B 78 00 |
| DOUBLE WIDTH OFF | BEFORE END OF LINE | DC4 | 14 |
| DOUBLE WIDTH ON | FOR ONE LINE ONLY | SO | 0E |
| DOUBLE WIDTH ON | FOR ONE LINE ONLY | ESC SO | 1B 0E |
| EMPHASIZED OFF | | ESC F | 1B 46 |
| EMPHASIZED ON | | ESC E | 1B 45 |
| ENHANCED OFF | DOUBLE STRIKE | ESC H | 1B 48 |
| ENHANCED ON | DOUBLE STRIKE | ESC G | 1B 47 |
| ITALICS OFF | | ESC 5 | 1B 35 |
| ITALICS ON | | ESC 4 | 1B 34 |
| NLQ AUTO JUSTIFICATION | LEFT,MID,RIGHT,FULL | ESC a n | 1B 61 n |
| PROPORTIONAL SPACING OFF | | ESC p 0 | 1B 70 30 |
| PROPORTIONAL SPACING ON | | ESC p 1 | 1B 70 31 |
| SPACE BETWEEN CHARACTERS | 0<=N<=127 (FX:63) | ESC SP n | 1B 20 n |

| | | | |
|------------------|----------------------|---------|----------|
| SUBSCRIPT OFF | ALSO SUPERSCRIPT OFF | ESC T | 1B 54 |
| SUBSCRIPT ON | | ESC S 1 | 1B 53 31 |
| SUPERSCRIPT OFF | ALSO SUBSCRIPT OFF | ESC T | 1B 54 |
| SUPERSCRIPT ON | | ESC S 0 | 1B 53 30 |
| UNDERLINE OFF | | ESC - 0 | 1B 2D 31 |
| UNDERLINE ON | | ESC - 1 | 1B 2D 31 |
| WIDTH DOUBLE OFF | ML393:TRIPLE OFF,TOO | ESC W 0 | 1B 57 30 |
| WIDTH DOUBLE ON | | ESC W 1 | 1B 57 31 |

NORMAL PROPORTIONAL
UTILITY & NLQ & UTILITY SUP/SUB & NLQ SUP/SUB

I. Proportional characters: Width Table Firmware:

ML 320 EI E F/W 02.00 YR4084-7003 = Q 12
ML 321

Proportional Spacing : (ESC p 1 - ON, ESC p 0 - OFF)

| CHARACTER CODE | | | | SETWIDTH | | |
|----------------|---|-----|---|----------|---|---------|
| HEX | | DEC | | OCT | | #/120 " |
| ----- | | | | | | |
| 00 | - | 000 | - | 000 | = | -- |
| 01 | - | 001 | - | 001 | = | -- |
| 02 | - | 002 | - | 002 | = | -- |
| 03 | - | 003 | - | 003 | = | -- |
| 04 | - | 004 | - | 004 | = | -- |
| 05 | - | 005 | - | 005 | = | -- |
| 06 | - | 006 | - | 006 | = | -- |
| 07 | - | 007 | - | 007 | = | -- |
| 08 | - | 008 | - | 010 | = | -- |
| 09 | - | 009 | - | 011 | = | -- |
| 0A | - | 010 | - | 012 | = | -- |
| 0B | - | 011 | - | 013 | = | -- |
| 0C | - | 012 | - | 014 | = | -- |
| 0D | - | 013 | - | 015 | = | -- |
| 0E | - | 014 | - | 016 | = | -- |
| 0F | - | 015 | - | 017 | = | -- |
| 10 | - | 016 | - | 020 | = | -- |
| 11 | - | 017 | - | 021 | = | -- |
| 12 | - | 018 | - | 022 | = | -- |
| 13 | - | 019 | - | 023 | = | -- |
| 14 | - | 020 | - | 024 | = | -- |
| 15 | - | 021 | - | 025 | = | -- |
| 16 | - | 022 | - | 026 | = | -- |
| 17 | - | 023 | - | 027 | = | -- |
| 18 | - | 024 | - | 030 | = | -- |
| 19 | - | 025 | - | 031 | = | -- |
| 1A | - | 026 | - | 032 | = | -- |
| 1B | - | 027 | - | 033 | = | -- |
| 1C | - | 028 | - | 034 | = | -- |
| 1D | - | 029 | - | 035 | = | -- |
| 1E | - | 030 | - | 036 | = | -- |
| 1F | - | 031 | - | 037 | = | -- |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-----|-----|---|----------|------|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 20 | - | 032 | - | 040 | = 12 |
| 21 | - | 033 | - | 041 | = 05 |
| 22 | - | 034 | - | 042 | = 08 |
| 23 | - | 035 | - | 043 | = 12 |
| 24 | - | 036 | - | 044 | = 12 |
| 25 | - | 037 | - | 045 | = 12 |
| 26 | - | 038 | - | 046 | = 12 |
| 27 | - | 039 | - | 047 | = 05 |
| 28 | - | 040 | - | 050 | = 06 |
| 29 | - | 041 | - | 051 | = 06 |
| 2A | - | 042 | - | 052 | = 12 |
| 2B | - | 043 | - | 053 | = 12 |
| 2C | - | 044 | - | 054 | = 07 |
| 2D | - | 045 | - | 055 | = 12 |
| 2E | - | 046 | - | 056 | = 06 |
| 2F | - | 047 | - | 057 | = 10 |
| 30 | - | 048 | - | 060 | = 12 |
| 31 | - | 049 | - | 061 | = 08 |
| 32 | - | 050 | - | 062 | = 12 |
| 33 | - | 051 | - | 063 | = 12 |
| 34 | - | 052 | - | 064 | = 12 |
| 35 | - | 053 | - | 065 | = 12 |
| 36 | - | 054 | - | 066 | = 12 |
| 37 | - | 055 | - | 067 | = 12 |
| 38 | - | 056 | - | 070 | = 12 |
| 39 | - | 057 | - | 071 | = 12 |
| 3A | - | 058 | - | 072 | = 06 |
| 3B | - | 059 | - | 073 | = 06 |
| 3C | - | 060 | - | 074 | = 10 |
| 3D | - | 061 | - | 075 | = 12 |
| 3E | - | 062 | - | 076 | = 10 |
| 3F | - | 063 | - | 077 | = 12 |
| 40 | - | 064 | - | 100 | = 12 |
| 41 | - | 065 | - | 101 | = 12 |
| 42 | - | 066 | - | 102 | = 12 |
| 43 | - | 067 | - | 103 | = 12 |
| 44 | - | 068 | - | 104 | = 12 |
| 45 | - | 069 | - | 105 | = 12 |
| 46 | - | 070 | - | 106 | = 12 |
| 47 | - | 071 | - | 107 | = 12 |
| 48 | - | 072 | - | 110 | = 12 |
| 49 | - | 073 | - | 111 | = 08 |
| 4A | - | 074 | - | 112 | = 11 |
| 4B | - | 075 | - | 113 | = 12 |
| 4C | - | 076 | - | 114 | = 12 |
| 4D | - | 077 | - | 115 | = 12 |
| 4E | - | 078 | - | 116 | = 12 |
| 4F | - | 079 | - | 117 | = 12 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-----|-----|---|----------|------|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 50 | - | 080 | - | 120 | = 12 |
| 51 | - | 081 | - | 121 | = 12 |
| 52 | - | 082 | - | 122 | = 12 |
| 53 | - | 083 | - | 123 | = 12 |
| 54 | - | 084 | - | 124 | = 12 |
| 55 | - | 085 | - | 125 | = 12 |
| 56 | - | 086 | - | 126 | = 12 |
| 57 | - | 087 | - | 127 | = 12 |
| 58 | - | 088 | - | 130 | = 10 |
| 59 | - | 089 | - | 131 | = 12 |
| 5A | - | 090 | - | 132 | = 10 |
| 5B | - | 091 | - | 133 | = 08 |
| 5C | - | 092 | - | 134 | = 10 |
| 5D | - | 093 | - | 135 | = 08 |
| 5E | - | 094 | - | 136 | = 12 |
| 5F | - | 095 | - | 137 | = 12 |
| 60 | - | 096 | - | 140 | = 05 |
| 61 | - | 097 | - | 141 | = 12 |
| 62 | - | 098 | - | 142 | = 11 |
| 63 | - | 099 | - | 143 | = 11 |
| 64 | - | 100 | - | 144 | = 11 |
| 65 | - | 101 | - | 145 | = 12 |
| 66 | - | 102 | - | 146 | = 10 |
| 67 | - | 103 | - | 147 | = 11 |
| 68 | - | 104 | - | 150 | = 11 |
| 69 | - | 105 | - | 151 | = 08 |
| 6A | - | 106 | - | 152 | = 09 |
| 6B | - | 107 | - | 153 | = 10 |
| 6C | - | 108 | - | 154 | = 08 |
| 6D | - | 109 | - | 155 | = 12 |
| 6E | - | 110 | - | 156 | = 11 |
| 6F | - | 111 | - | 157 | = 12 |
| 70 | - | 112 | - | 160 | = 11 |
| 71 | - | 113 | - | 161 | = 11 |
| 72 | - | 114 | - | 162 | = 11 |
| 73 | - | 115 | - | 163 | = 12 |
| 74 | - | 116 | - | 164 | = 11 |
| 75 | - | 117 | - | 165 | = 12 |
| 76 | - | 118 | - | 166 | = 12 |
| 77 | - | 119 | - | 167 | = 12 |
| 78 | - | 120 | - | 170 | = 10 |
| 79 | - | 121 | - | 171 | = 12 |
| 7A | - | 122 | - | 172 | = 10 |
| 7B | - | 123 | - | 173 | = 09 |
| 7C | - | 124 | - | 174 | = 05 |
| 7D | - | 125 | - | 175 | = 09 |
| 7E | - | 126 | - | 176 | = 12 |
| 7F | - | 127 | - | 177 | = 00 |
| 80 | - | 128 | - | 200 | = 12 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-----|-----|---|----------|------|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 81 | - | 129 | - | 201 | = 11 |
| 82 | - | 130 | - | 202 | = 12 |
| 83 | - | 131 | - | 203 | = 12 |
| 84 | - | 132 | - | 204 | = 12 |
| 85 | - | 133 | - | 205 | = 12 |
| 86 | - | 134 | - | 206 | = 12 |
| 87 | - | 135 | - | 207 | = 11 |
| 88 | - | 136 | - | 210 | = 12 |
| 89 | - | 137 | - | 211 | = 12 |
| 8A | - | 138 | - | 212 | = 12 |
| 8B | - | 139 | - | 213 | = 08 |
| 8C | - | 140 | - | 214 | = 10 |
| 8D | - | 141 | - | 215 | = 08 |
| 8E | - | 142 | - | 216 | = 12 |
| 8F | - | 143 | - | 217 | = 12 |
| 90 | - | 144 | - | 220 | = 12 |
| 91 | - | 145 | - | 221 | = 12 |
| 92 | - | 146 | - | 222 | = 12 |
| 93 | - | 147 | - | 223 | = 10 |
| 94 | - | 148 | - | 224 | = 10 |
| 95 | - | 149 | - | 225 | = 10 |
| 96 | - | 150 | - | 226 | = 11 |
| 97 | - | 151 | - | 227 | = 11 |
| 98 | - | 152 | - | 230 | = 12 |
| 99 | - | 153 | - | 231 | = 12 |
| 9A | - | 154 | - | 232 | = 12 |
| 9B | - | 155 | - | 233 | = 11 |
| 9C | - | 156 | - | 234 | = 12 |
| 9D | - | 157 | - | 235 | = 12 |
| 9E | - | 158 | - | 236 | = 12 |
| 9F | - | 159 | - | 237 | = 11 |
| A0 | - | 160 | - | 240 | = 12 |
| A1 | - | 161 | - | 241 | = 08 |
| A2 | - | 162 | - | 242 | = 10 |
| A3 | - | 163 | - | 243 | = 11 |
| A4 | - | 164 | - | 244 | = 11 |
| A5 | - | 165 | - | 245 | = 12 |
| A6 | - | 166 | - | 246 | = 12 |
| A7 | - | 167 | - | 247 | = 12 |
| A8 | - | 168 | - | 250 | = 12 |
| A9 | - | 169 | - | 251 | = 12 |
| AA | - | 170 | - | 252 | = 12 |
| AB | - | 171 | - | 253 | = 12 |
| AC | - | 172 | - | 254 | = 12 |
| AD | - | 173 | - | 255 | = 05 |
| AE | - | 174 | - | 256 | = 12 |
| AF | - | 175 | - | 257 | = 12 |
| B0 | - | 176 | - | 260 | = 12 |
| B1 | - | 177 | - | 261 | = 12 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| B2 | - 178 | - 262 | = | 12 | |
| B3 | - 179 | - 263 | = | 12 | |
| B4 | - 180 | - 264 | = | 12 | |
| B5 | - 181 | - 265 | = | 12 | |
| B6 | - 182 | - 266 | = | 12 | |
| B7 | - 183 | - 267 | = | 12 | |
| B8 | - 184 | - 270 | = | 12 | |
| B9 | - 185 | - 271 | = | 12 | |
| BA | - 186 | - 272 | = | 12 | |
| BB | - 187 | - 273 | = | 12 | |
| BC | - 188 | - 274 | = | 12 | |
| BD | - 189 | - 275 | = | 12 | |
| BE | - 190 | - 276 | = | 12 | |
| BF | - 191 | - 277 | = | 12 | |
| C0 | - 192 | - 300 | = | 12 | |
| C1 | - 193 | - 301 | = | 12 | |
| C2 | - 194 | - 302 | = | 12 | |
| C3 | - 195 | - 303 | = | 12 | |
| C4 | - 196 | - 304 | = | 12 | |
| C5 | - 197 | - 305 | = | 12 | |
| C6 | - 198 | - 306 | = | 12 | |
| C7 | - 199 | - 307 | = | 12 | |
| C8 | - 200 | - 310 | = | 12 | |
| C9 | - 201 | - 311 | = | 12 | |
| CA | - 202 | - 312 | = | 12 | |
| CB | - 203 | - 313 | = | 12 | |
| CC | - 204 | - 314 | = | 12 | |
| CD | - 205 | - 315 | = | 12 | |
| CE | - 206 | - 316 | = | 12 | |
| CF | - 207 | - 317 | = | 12 | |
| D0 | - 208 | - 320 | = | 12 | |
| D1 | - 209 | - 321 | = | 12 | |
| D2 | - 210 | - 322 | = | 12 | |
| D3 | - 211 | - 323 | = | 12 | |
| D4 | - 212 | - 324 | = | 12 | |
| D5 | - 213 | - 325 | = | 12 | |
| D6 | - 214 | - 326 | = | 12 | |
| D7 | - 215 | - 327 | = | 12 | |
| D8 | - 216 | - 330 | = | 12 | |
| D9 | - 217 | - 331 | = | 12 | |
| DA | - 218 | - 332 | = | 12 | |
| DB | - 219 | - 333 | = | 12 | |
| DC | - 220 | - 334 | = | 12 | |
| DD | - 221 | - 335 | = | 12 | |
| DE | - 222 | - 336 | = | 12 | |
| DF | - 223 | - 337 | = | 12 | |
| E0 | - 224 | - 340 | = | 12 | |

| CHARACTER CODE | | | | SETWIDTH | | |
|----------------|---|-----|---|----------|---|--------|
| HEX | | DEC | | OCT | | #/120" |
| ----- | | | | | | |
| E1 | - | 225 | - | 341 | = | 11 |
| E2 | - | 226 | - | 342 | = | 10 |
| E3 | - | 227 | - | 343 | = | 12 |
| E4 | - | 228 | - | 344 | = | 10 |
| E5 | - | 229 | - | 345 | = | 11 |
| E6 | - | 230 | - | 346 | = | 11 |
| E7 | - | 231 | - | 347 | = | 12 |
| E8 | - | 232 | - | 350 | = | 10 |
| E9 | - | 233 | - | 351 | = | 12 |
| EA | - | 234 | - | 352 | = | 12 |
| EB | - | 235 | - | 353 | = | 12 |
| EC | - | 236 | - | 354 | = | 12 |
| ED | - | 237 | - | 355 | = | 12 |
| EE | - | 238 | - | 356 | = | 10 |
| EF | - | 239 | - | 357 | = | 10 |
| F0 | - | 240 | - | 360 | = | 12 |
| F1 | - | 241 | - | 361 | = | 12 |
| F2 | - | 242 | - | 362 | = | 10 |
| F3 | - | 243 | - | 363 | = | 10 |
| F4 | - | 244 | - | 364 | = | 12 |
| F5 | - | 245 | - | 365 | = | 12 |
| F6 | - | 246 | - | 366 | = | 12 |
| F7 | - | 247 | - | 367 | = | 12 |
| F8 | - | 248 | - | 370 | = | 08 |
| F9 | - | 249 | - | 371 | = | 06 |
| FA | - | 250 | - | 372 | = | 06 |
| FB | - | 251 | - | 373 | = | 12 |
| FC | - | 252 | - | 374 | = | 08 |
| FD | - | 253 | - | 375 | = | 08 |
| FE | - | 254 | - | 376 | = | 08 |
| FF | - | 255 | - | 377 | = | 12 |

ISO 320 EPSON Normal

| Position | | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|-----------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Dec. Code | | 35 | 36 | 38 | 60 | 62 | 64 | 91 | 92 | 93 | 94 | 95 | 96 | 105 | 123 | 124 | 125 | 126 |
| Hexadec. ESC! n | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AMERICAN | 00 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 10 | 08 | 12 | 12 | 05 | 08 | 09 | 05 | 09 | 12 |
| FRENCH | 01 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 11 | 10 | 12 | 12 | 05 | 08 | 12 | 11 | 12 | 08 |
| GERMAN | 02 | 12 | 12 | 12 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 05 | 08 | 12 | 10 | 11 | 11 |
| BRITISH | 03 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 10 | 08 | 12 | 12 | 05 | 08 | 09 | 05 | 09 | 12 |
| DANISH I | 04 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 05 | 08 | 12 | 12 | 12 | 12 |
| SWEDISH I | 05 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 10 | 12 | 11 |
| ITALIAN | 06 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 10 | 12 | 12 | 12 | 11 | 08 | 12 | 10 | 12 | 08 |
| SPANISH I | 07 | 12 | 12 | 12 | 10 | 10 | 12 | 05 | 12 | 12 | 12 | 12 | 05 | 08 | 08 | 11 | 09 | 12 |
| JAPANESE | 08 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 12 | 08 | 12 | 12 | 05 | 08 | 09 | 05 | 09 | 12 |
| NORWEGIAN | 09 | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 12 | 12 | 11 |
| DANISH II | 0A | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 12 | 12 | 11 |
| SPANISH II | 0B | 12 | 12 | 12 | 10 | 10 | 12 | 05 | 12 | 12 | 12 | 12 | 05 | 08 | 08 | 11 | 10 | 11 |
| LATIN AMERIC | 0C | 12 | 12 | 12 | 10 | 10 | 12 | 05 | 12 | 12 | 12 | 12 | 11 | 08 | 08 | 11 | 10 | 11 |
| FRENCH CAN | 0D | 11 | 12 | 12 | 10 | 10 | 12 | 12 | 11 | 12 | 10 | 08 | 10 | 08 | 12 | 11 | 12 | 11 |
| DUTCH | 0E | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 12 | 08 | 12 | 12 | 05 | 08 | 09 | 11 | 09 | 12 |
| SWEDISH II | 0F | 12 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 10 | 12 | 11 |
| SWEDISH III | 10 | 10 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 10 | 12 | 11 |
| SWEDISH IV | 11 | 10 | 12 | 12 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 08 | 12 | 10 | 12 | 11 |
| TURKISH | 12 | 12 | 12 | 12 | 10 | 10 | 12 | 08 | 10 | 11 | 12 | 12 | 11 | 08 | 08 | 12 | 12 | 12 |
| SWISS I | 13 | 12 | 12 | 12 | 10 | 10 | 11 | 12 | 12 | 12 | 12 | 12 | 05 | 08 | 12 | 10 | 11 | 10 |
| SWISS II | 14 | 12 | 12 | 12 | 10 | 10 | 12 | 11 | 12 | 12 | 12 | 12 | 05 | 08 | 12 | 10 | 11 | 12 |
| | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

Value of n can also be between 30 - 39 hex equal to 00 - 09 hex!

ITALICS PROPORTIONAL
UTILITY & NLQ & UTILITY SUP/SUB & NLQ SUP/SUB

I. Proportional characters: Width Table Firmware:

ML 320 EI E F/W 02.00 YR4084-7003 = Q 12
 ML 321

Proportional Spacing : (ESC p 1 - ON, ESC p 0 - OFF)
Italics : (ESC 4 - ON, ESC 5 - OFF)

| CHARACTER CODE | | | | SETWIDTH | | |
|----------------|---|-----|---|----------|---|--------|
| HEX | | DEC | | OCT | | #/120" |
| ----- | | | | | | |
| 00 | - | 000 | - | 000 | = | -- |
| 01 | - | 001 | - | 001 | = | -- |
| 02 | - | 002 | - | 002 | = | -- |
| 03 | - | 003 | - | 003 | = | -- |
| 04 | - | 004 | - | 004 | = | -- |
| 05 | - | 005 | - | 005 | = | -- |
| 06 | - | 006 | - | 006 | = | -- |
| 07 | - | 007 | - | 007 | = | -- |
| 08 | - | 008 | - | 010 | = | -- |
| 09 | - | 009 | - | 011 | = | -- |
| 0A | - | 010 | - | 012 | = | -- |
| 0B | - | 011 | - | 013 | = | -- |
| 0C | - | 012 | - | 014 | = | -- |
| 0D | - | 013 | - | 015 | = | -- |
| 0E | - | 014 | - | 016 | = | -- |
| 0F | - | 015 | - | 017 | = | -- |
| 10 | - | 016 | - | 020 | = | -- |
| 11 | - | 017 | - | 021 | = | -- |
| 12 | - | 018 | - | 022 | = | -- |
| 13 | - | 019 | - | 023 | = | -- |
| 14 | - | 020 | - | 024 | = | -- |
| 15 | - | 021 | - | 025 | = | -- |
| 16 | - | 022 | - | 026 | = | -- |
| 17 | - | 023 | - | 027 | = | -- |
| 18 | - | 024 | - | 030 | = | -- |
| 19 | - | 025 | - | 031 | = | -- |
| 1A | - | 026 | - | 032 | = | -- |
| 1B | - | 027 | - | 033 | = | -- |
| 1C | - | 028 | - | 034 | = | -- |
| 1D | - | 029 | - | 035 | = | -- |
| 1E | - | 030 | - | 036 | = | -- |
| 1F | - | 031 | - | 037 | = | -- |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-----|-----|---|----------|------|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 20 | - | 032 | - | 040 | = 12 |
| 21 | - | 033 | - | 041 | = 10 |
| 22 | - | 034 | - | 042 | = 10 |
| 23 | - | 035 | - | 043 | = 12 |
| 24 | - | 036 | - | 044 | = 11 |
| 25 | - | 037 | - | 045 | = 12 |
| 26 | - | 038 | - | 046 | = 12 |
| 27 | - | 039 | - | 047 | = 05 |
| 28 | - | 040 | - | 050 | = 08 |
| 29 | - | 041 | - | 051 | = 08 |
| 2A | - | 042 | - | 052 | = 12 |
| 2B | - | 043 | - | 053 | = 12 |
| 2C | - | 044 | - | 054 | = 08 |
| 2D | - | 045 | - | 055 | = 12 |
| 2E | - | 046 | - | 056 | = 07 |
| 2F | - | 047 | - | 057 | = 10 |
| 30 | - | 048 | - | 060 | = 12 |
| 31 | - | 049 | - | 061 | = 09 |
| 32 | - | 050 | - | 062 | = 12 |
| 33 | - | 051 | - | 063 | = 12 |
| 34 | - | 052 | - | 064 | = 12 |
| 35 | - | 053 | - | 065 | = 12 |
| 36 | - | 054 | - | 066 | = 12 |
| 37 | - | 055 | - | 067 | = 12 |
| 38 | - | 056 | - | 070 | = 12 |
| 39 | - | 057 | - | 071 | = 12 |
| 3A | - | 058 | - | 072 | = 08 |
| 3B | - | 059 | - | 073 | = 09 |
| 3C | - | 060 | - | 074 | = 10 |
| 3D | - | 061 | - | 075 | = 11 |
| 3E | - | 062 | - | 076 | = 09 |
| 3F | - | 063 | - | 077 | = 11 |
| 40 | - | 064 | - | 100 | = 12 |
| 41 | - | 065 | - | 101 | = 12 |
| 42 | - | 066 | - | 102 | = 12 |
| 43 | - | 067 | - | 103 | = 12 |
| 44 | - | 068 | - | 104 | = 12 |
| 45 | - | 069 | - | 105 | = 12 |
| 46 | - | 070 | - | 106 | = 12 |
| 47 | - | 071 | - | 107 | = 12 |
| 48 | - | 072 | - | 110 | = 12 |
| 49 | - | 073 | - | 111 | = 10 |
| 4A | - | 074 | - | 112 | = 12 |
| 4B | - | 075 | - | 113 | = 12 |
| 4C | - | 076 | - | 114 | = 10 |
| 4D | - | 077 | - | 115 | = 12 |
| 4E | - | 078 | - | 116 | = 12 |
| 4F | - | 079 | - | 117 | = 12 |

| CHARACTER CODE | | | SETWIDTH | | |
|----------------|-----|-----|----------|-----|------|
| HEX | DEC | OCT | #/120" | | |
| 50 | - | 080 | - | 120 | = 12 |
| 51 | - | 081 | - | 121 | = 12 |
| 52 | - | 082 | - | 122 | = 12 |
| 53 | - | 083 | - | 123 | = 12 |
| 54 | - | 084 | - | 124 | = 12 |
| 55 | - | 085 | - | 125 | = 12 |
| 56 | - | 086 | - | 126 | = 11 |
| 57 | - | 087 | - | 127 | = 12 |
| 58 | - | 088 | - | 130 | = 12 |
| 59 | - | 089 | - | 131 | = 12 |
| 5A | - | 090 | - | 132 | = 12 |
| 5B | - | 091 | - | 133 | = 11 |
| 5C | - | 092 | - | 134 | = 07 |
| 5D | - | 093 | - | 135 | = 11 |
| 5E | - | 094 | - | 136 | = 10 |
| 5F | - | 095 | - | 137 | = 12 |
| 60 | - | 096 | - | 140 | = 05 |
| 61 | - | 097 | - | 141 | = 11 |
| 62 | - | 098 | - | 142 | = 11 |
| 63 | - | 099 | - | 143 | = 11 |
| 64 | - | 100 | - | 144 | = 12 |
| 65 | - | 101 | - | 145 | = 11 |
| 66 | - | 102 | - | 146 | = 12 |
| 67 | - | 103 | - | 147 | = 11 |
| 68 | - | 104 | - | 150 | = 11 |
| 69 | - | 105 | - | 151 | = 09 |
| 6A | - | 106 | - | 152 | = 10 |
| 6B | - | 107 | - | 153 | = 11 |
| 6C | - | 108 | - | 154 | = 09 |
| 6D | - | 109 | - | 155 | = 11 |
| 6E | - | 110 | - | 156 | = 10 |
| 6F | - | 111 | - | 157 | = 11 |
| 70 | - | 112 | - | 160 | = 11 |
| 71 | - | 113 | - | 161 | = 11 |
| 72 | - | 114 | - | 162 | = 10 |
| 73 | - | 115 | - | 163 | = 11 |
| 74 | - | 116 | - | 164 | = 10 |
| 75 | - | 117 | - | 165 | = 11 |
| 76 | - | 118 | - | 166 | = 10 |
| 77 | - | 119 | - | 167 | = 12 |
| 78 | - | 120 | - | 170 | = 12 |
| 79 | - | 121 | - | 171 | = 11 |
| 7A | - | 122 | - | 172 | = 12 |
| 7B | - | 123 | - | 173 | = 10 |
| 7C | - | 124 | - | 174 | = 09 |
| 7D | - | 125 | - | 175 | = 10 |
| 7E | - | 126 | - | 176 | = 12 |
| 7F | - | 127 | - | 177 | = 00 |
| 80 | - | 128 | - | 200 | = 12 |
| 81 | - | 129 | - | 201 | = 12 |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| 82 | - 130 | - 202 | = | 11 | |
| 83 | - 131 | - 203 | = | 12 | |
| 84 | - 132 | - 204 | = | 11 | |
| 85 | - 133 | - 205 | = | 11 | |
| 86 | - 134 | - 206 | = | 11 | |
| 87 | - 135 | - 207 | = | 11 | |
| 88 | - 136 | - 210 | = | 12 | |
| 89 | - 137 | - 211 | = | 11 | |
| 8A | - 138 | - 212 | = | 11 | |
| 8B | - 139 | - 213 | = | 10 | |
| 8C | - 140 | - 214 | = | 11 | |
| 8D | - 141 | - 215 | = | 08 | |
| 8E | - 142 | - 216 | = | 12 | |
| 8F | - 143 | - 217 | = | 12 | |
| 90 | - 144 | - 220 | = | 12 | |
| 91 | - 145 | - 221 | = | 12 | |
| 92 | - 146 | - 222 | = | 12 | |
| 93 | - 147 | - 223 | = | 12 | |
| 94 | - 148 | - 224 | = | 11 | |
| 95 | - 149 | - 225 | = | 11 | |
| 96 | - 150 | - 226 | = | 11 | |
| 97 | - 151 | - 227 | = | 11 | |
| 98 | - 152 | - 230 | = | 11 | |
| 99 | - 153 | - 231 | = | 12 | |
| 9A | - 154 | - 232 | = | 12 | |
| 9B | - 155 | - 233 | = | 11 | |
| 9C | - 156 | - 234 | = | 12 | |
| 9D | - 157 | - 235 | = | 12 | |
| 9E | - 158 | - 236 | = | 12 | |
| 9F | - 159 | - 237 | = | 12 | |
| A0 | - 160 | - 240 | = | 11 | |
| A1 | - 161 | - 241 | = | 10 | |
| A2 | - 162 | - 242 | = | 12 | |
| A3 | - 163 | - 243 | = | 11 | |
| A4 | - 164 | - 244 | = | 12 | |
| A5 | - 165 | - 245 | = | 12 | |
| A6 | - 166 | - 246 | = | 11 | |
| A7 | - 167 | - 247 | = | 12 | |
| A8 | - 168 | - 250 | = | 11 | |
| A9 | - 169 | - 251 | = | 12 | |
| AA | - 170 | - 252 | = | 12 | |
| AB | - 171 | - 253 | = | 12 | |
| AC | - 172 | - 254 | = | 12 | |
| AD | - 173 | - 255 | = | 10 | |
| AE | - 174 | - 256 | = | 12 | |
| AF | - 175 | - 257 | = | 12 | |
| B0 | - 176 | - 260 | = | 12 | |
| B1 | - 177 | - 261 | = | 12 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-------|-------|---|----------|--|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| B2 | - 178 | - 262 | = | 12 | |
| B3 | - 179 | - 263 | = | 12 | |
| B4 | - 180 | - 264 | = | 12 | |
| B5 | - 181 | - 265 | = | 12 | |
| B6 | - 182 | - 266 | = | 12 | |
| B7 | - 183 | - 267 | = | 12 | |
| B8 | - 184 | - 270 | = | 12 | |
| B9 | - 185 | - 271 | = | 12 | |
| BA | - 186 | - 272 | = | 12 | |
| BB | - 187 | - 273 | = | 12 | |
| BC | - 188 | - 274 | = | 12 | |
| BD | - 189 | - 275 | = | 12 | |
| BE | - 190 | - 276 | = | 12 | |
| BF | - 191 | - 277 | = | 12 | |
| C0 | - 192 | - 300 | = | 12 | |
| C1 | - 193 | - 301 | = | 12 | |
| C2 | - 194 | - 302 | = | 12 | |
| C3 | - 195 | - 303 | = | 12 | |
| C4 | - 196 | - 304 | = | 12 | |
| C5 | - 197 | - 305 | = | 12 | |
| C6 | - 198 | - 306 | = | 12 | |
| C7 | - 199 | - 307 | = | 12 | |
| C8 | - 200 | - 310 | = | 12 | |
| C9 | - 201 | - 311 | = | 12 | |
| CA | - 202 | - 312 | = | 12 | |
| CB | - 203 | - 313 | = | 12 | |
| CC | - 204 | - 314 | = | 12 | |
| CD | - 205 | - 315 | = | 12 | |
| CE | - 206 | - 316 | = | 12 | |
| CF | - 207 | - 317 | = | 12 | |
| D0 | - 208 | - 320 | = | 12 | |
| D1 | - 209 | - 321 | = | 12 | |
| D2 | - 210 | - 322 | = | 12 | |
| D3 | - 211 | - 323 | = | 12 | |
| D4 | - 212 | - 324 | = | 12 | |
| D5 | - 213 | - 325 | = | 12 | |
| D6 | - 214 | - 326 | = | 12 | |
| D7 | - 215 | - 327 | = | 12 | |
| D8 | - 216 | - 330 | = | 12 | |
| D9 | - 217 | - 331 | = | 12 | |
| DA | - 218 | - 332 | = | 12 | |
| DB | - 219 | - 333 | = | 12 | |
| DC | - 220 | - 334 | = | 12 | |
| DD | - 221 | - 335 | = | 12 | |
| DE | - 222 | - 336 | = | 12 | |
| DF | - 223 | - 337 | = | 12 | |
| E0 | - 224 | - 340 | = | 12 | |
| E1 | - 225 | - 341 | = | 11 | |

| CHARACTER CODE | | | | SETWIDTH | |
|----------------|-----|-----|---|----------|------|
| HEX | DEC | OCT | | #/120" | |
| ----- | | | | | |
| <i>E2</i> | - | 226 | - | 342 | = 12 |
| <i>E3</i> | - | 227 | - | 343 | = 12 |
| <i>E4</i> | - | 228 | - | 344 | = 12 |
| <i>E5</i> | - | 229 | - | 345 | = 12 |
| <i>E6</i> | - | 230 | - | 346 | = 12 |
| <i>E7</i> | - | 231 | - | 347 | = 12 |
| <i>E8</i> | - | 232 | - | 350 | = 12 |
| <i>E9</i> | - | 233 | - | 351 | = 12 |
| <i>EA</i> | - | 234 | - | 352 | = 12 |
| <i>EB</i> | - | 235 | - | 353 | = 11 |
| <i>EC</i> | - | 236 | - | 354 | = 12 |
| <i>ED</i> | - | 237 | - | 355 | = 11 |
| <i>EE</i> | - | 238 | - | 356 | = 10 |
| <i>EF</i> | - | 239 | - | 357 | = 12 |
| <i>F0</i> | - | 240 | - | 360 | = 12 |
| <i>F1</i> | - | 241 | - | 361 | = 12 |
| <i>F2</i> | - | 242 | - | 362 | = 10 |
| <i>F3</i> | - | 243 | - | 363 | = 10 |
| <i>F4</i> | - | 244 | - | 364 | = 12 |
| <i>F5</i> | - | 245 | - | 365 | = 12 |
| <i>F6</i> | - | 246 | - | 366 | = 12 |
| <i>F7</i> | - | 247 | - | 367 | = 12 |
| <i>F8</i> | - | 248 | - | 370 | = 08 |
| <i>F9</i> | - | 249 | - | 371 | = 06 |
| <i>FA</i> | - | 250 | - | 372 | = 06 |
| <i>FB</i> | - | 251 | - | 373 | = 12 |
| <i>FC</i> | - | 252 | - | 374 | = 08 |
| <i>FD</i> | - | 253 | - | 375 | = 08 |
| <i>FE</i> | - | 254 | - | 376 | = 08 |
| <i>FF</i> | - | 255 | - | 377 | = 12 |

ISO 320 EPSON Italics

| Position | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Dec. Code | 35 | 36 | 38 | 60 | 62 | 64 | 91 | 92 | 93 | 94 | 95 | 96 | 105 | 123 | 124 | 125 | 126 |
| Hexadec. ESC! n | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AMERICAN | 00 | 12 | 11 | 12 | 10 | 09 | 12 | 11 | 07 | 11 | 10 | 12 | 05 | 09 | 10 | 09 | 12 |
| FRENCH | 01 | 12 | 11 | 12 | 10 | 09 | 11 | 08 | 11 | 12 | 10 | 12 | 05 | 09 | 11 | 11 | 09 |
| GERMAN | 02 | 12 | 11 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 12 | 05 | 09 | 11 | 11 | 12 |
| BRITISH | 03 | 12 | 11 | 12 | 10 | 09 | 12 | 11 | 07 | 11 | 10 | 12 | 05 | 09 | 10 | 09 | 12 |
| DANISH I | 04 | 12 | 11 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 12 | 05 | 09 | 12 | 11 | 12 |
| SWEDISH I | 05 | 12 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 12 |
| ITALIAN | 06 | 12 | 11 | 12 | 10 | 09 | 12 | 08 | 07 | 11 | 10 | 12 | 11 | 09 | 11 | 11 | 08 |
| SPANISH I | 07 | 12 | 11 | 12 | 10 | 09 | 12 | 10 | 12 | 11 | 10 | 12 | 05 | 09 | 09 | 12 | 12 |
| JAPANESE | 08 | 12 | 11 | 12 | 10 | 09 | 12 | 11 | 12 | 11 | 10 | 12 | 05 | 09 | 10 | 09 | 12 |
| NORWEGIAN | 09 | 12 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 12 | 11 | 12 |
| DANISH II | 0A | 12 | 11 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 12 | 11 | 12 |
| SPANISH II | 0B | 12 | 11 | 12 | 10 | 09 | 11 | 10 | 12 | 11 | 11 | 12 | 05 | 09 | 10 | 12 | 12 |
| LATIN AMERIC | 0C | 12 | 11 | 12 | 10 | 09 | 11 | 10 | 12 | 11 | 11 | 12 | 12 | 09 | 10 | 12 | 12 |
| FRENCH CAN | 0D | 12 | 11 | 11 | 10 | 09 | 11 | 12 | 11 | 12 | 11 | 10 | 12 | 09 | 11 | 11 | 12 |
| DUTCH | 0E | 12 | 11 | 12 | 10 | 09 | 12 | 11 | 12 | 11 | 10 | 12 | 05 | 09 | 10 | 12 | 12 |
| SWEDISH II | 0F | 12 | 11 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 12 |
| SWEDISH III | 10 | 12 | 11 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 12 | 12 | 11 | 09 | 11 | 11 | 12 |
| SWEDISH IV | 11 | 12 | 12 | 12 | 10 | 09 | 12 | 12 | 12 | 12 | 10 | 12 | 11 | 09 | 11 | 11 | 12 |
| TURKISH | 12 | 12 | 11 | 12 | 10 | 09 | 12 | 09 | 11 | 12 | 12 | 12 | 11 | 09 | 12 | 12 | 12 |
| SWISS I | 13 | 12 | 11 | 12 | 09 | 10 | 11 | 11 | 11 | 11 | 10 | 12 | 05 | 09 | 11 | 11 | 07 |
| SWISS II | 14 | 12 | 11 | 12 | 10 | 09 | 12 | 11 | 11 | 11 | 10 | 12 | 05 | 09 | 11 | 11 | 12 |
| ----- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

Value of n can also be between 30 - 39 hex equal to 00 - 09 hex!

```
*****
*
*   Parallel Centronics IF   Seite: 68
*
*****
*
*   RS 232C Interface        Seite: 69-71
*   (incl. Kabelvorschlag)
*****
*
*   RS 422A Interface        Seite: 72-74
*
*****
*
*   Current Loop IF          Seite: 75-80
*   CO-Resident (RS232/Current Loop)
*****
```

Centronics-Parallel Interface 36-poliges Interface

| | | | |
|---------------|----------|--------------|--------------------------|
| <u>Strobe</u> | --> o 1 | 19 o --- | GND/0V |
| D0 | --> o 2 | 20 o --- | GND/0V |
| D1 | --> o 3 | 21 o --- | GND/0V |
| D2 | --> o 4 | 22 o --- | GND/0V |
| D3 | --> o 5 | 23 o --- | GND/0V |
| D4 | --> o 6 | 24 o --- | GND/0V |
| D5 | --> o 7 | 25 o --- | GND/0V |
| D6 | --> o 8 | 26 o --- | GND/0V |
| D7 | --> o 9 | 27 o --- | GND/0V |
| <u>ACK</u> | <-- o 10 | 28 o --- | GND/0V |
| Busy | <-- o 11 | 29 o --- | GND/0V |
| Paper End | <-- o 12 | 30 o --- | GND/0V |
| Select | <-- o 13 | 31 o <-- | <u>Input Prime ***</u>) |
| Auto Feed *) | --> o 14 | 32 o --> | <u>Fault</u> |
| | o | o | |
| GND/0V | --- o 16 | o | |
| Shield Ground | --- o 17 | o | |
| +5V ** | <-- o 18 | 36 o | |
| | | | |
| --- | o --- | no direction | |
| <-- | o --> | from Printer | |
| --> | o <-- | to Printer | |

Jumper Setting for Centronics Parallel Internal Test

| | | | | | | | |
|-----|-------------------|---------------------------|---|------|-----------------|-----|-----|
| *) | SP5: | A | B | ***) | SP4: | A | B |
| | Auto Feed enable | o | o | | I-Prime enable | o | o-o |
| | Auto Feed disable | o | o | | I-Prime disable | o-o | o |
| | | | | | | | |
| **) | SP1: | | | | | | |
| | +5V available | o-o | | | | | |
| | +5V not available | o o (no Jumper installed) | | | | | |

RS-232C Serial Interface Board**Menü - Factory Setting**

| | |
|------------------------|--|
| Parity | ODD, EVEN, NONE |
| Data Bit Length 7 or 8 | 7, 8 |
| Protocol | Ready/Busy , XON/XOFF |
| Diagnostic Test | NO , YES |
| Busy Line | SSD- , SSD+, DTR, RTS |
| Baud Rate | 300 bps, 600 bps, 1200 bps, 2400 bps, 4800 bps, 9600 bps, 9600 bps , 19600 bps |
| DSR Signal | Valid , Invalid |
| DTR Signal | Ready, -ON Power up -ON Select |
| Busy Time | 200 Milliseconds 1 Second |

RS-232C Serial Interface Board

25-poliges Interface

| | | | | | | | |
|-------|--------|-----|---|-----|----|---|--------------|
| Prot. | GND | --- | o | 1 | | | |
| | | | | | 14 | o | |
| | TxD | <-- | o | 2 | | o | |
| | RxD | --> | o | 3 | | o | |
| | RTS | <-- | o | 4 | | o | |
| | | | o | | | o | |
| | DSR | --> | o | 6 | | o | |
| Sign. | GND/0V | --- | o | 7 | | | |
| | (DCD) | --> | o | 8 | 20 | o | --> DTR |
| | | | o | | | o | |
| | | | o | | | o | |
| | SSD | <-- | o | 11 | | o | |
| | | | o | | 25 | o | |
| | | | o | 13 | | | |
| | | --- | o | --- | | | no direction |
| | | <-- | o | --> | | | from Printer |
| | | --> | o | <-- | | | to Printer |

Testplug RS232C

| | | | | |
|-------|----|-----|----|-----|
| TxD | 2 | --> | 3 | RxD |
| RTS | 4 | --> | 5 | CTS |
| (DCD) | 8 | <-- | 11 | SSD |
| DTR | 20 | --> | 6 | DSR |

IBM Personal Computer XT

OKI -RS 232C

25 pins SUB-D
(female) connector

25 pins SUB-D
male connector

| Name | Pin-No. | | Pin-No. | Name |
|----------|---------|-------------------------|---------|----------|
| DTE | | | | DTE |
| Prot.GND | 01 | ===== | 01 | Prot.GND |
| TxD | 02 | >-----: :-----< | 02 | TxD |
| | | :--->:>---: | | |
| RxD | 03 | <-----: :-----> | 03 | RxD |
| RTS | 04 | >---: :---< | 04 | RTS |
| CTS | 05 | <---: :---> | 05 | CTS |
| DSR | 06 | <---: :---> | 06 | DSR |
| DCD | 08 | <---:-----: :-----:---> | 08 | DCD |
| | | :--->:>---: | | |
| DTR | 20 | >-----: :-----< | 20 | DTR |
| Sig.GND | 07 | ----- | 07 | Sig.GND |

IBM Personal Computer AT

OKI -RS 232C

09 pins SUB-D
(female) connector

25 pins SUB-D
male connector

| Name | Pin-No. | | Pin-No. | Name |
|----------|---------|-----------------------|---------|----------|
| special | | | | DTE |
| Prot.GND | | ===== | 01 | Prot.GND |
| RxD | 02 | <-----< | 02 | TxD |
| TxD | 03 | >-----> | 03 | RxD |
| CTS | 08 | <---: :---< | 04 | RTS |
| RTS | 07 | >---: :---> | 05 | CTS |
| DSR | 06 | <---: :---> | 06 | DSR |
| DCD | 01 | <---:-----:-----:---> | 08 | DCD |
| | | :--->: >---: | | |
| DTR | 04 | >-----:-----< | 20 | DTR |
| Sig.GND | 05 | ----- | 07 | Sig.GND |

Menü-Setting RS 232 Interface

- ```

1.) Diagnostic Test = No
2.) Data Set Ready (DTR) = Invalid
3.) if Ready/Busy protokoll then 'Busy Line' = DTR

```

**RS-422A Serial Interface Board****Menü - Factory Setting**

|                        |                                                                                                |
|------------------------|------------------------------------------------------------------------------------------------|
| Parity                 | ODD, EVEN, <b>NONE</b>                                                                         |
| Data Bit Length 7 or 8 | 7, <b>8</b>                                                                                    |
| Protocol               | <b>Ready/Busy</b> , XON/XOFF                                                                   |
| Diagnostic Test        | <b>NO</b> , YES                                                                                |
| Busy Line              | <b>SSD-</b> , SSD+, DTR, RTS                                                                   |
| Baud Rate              | 300 bps, 600 bps,<br>1200 bps, 2400 bps,<br>4800 bps, 9600 bps,<br><b>9600 bps</b> , 19600 bps |
| DSR Signal             | <b>Valid</b> , Invalid                                                                         |
| DTR Signal             | Ready,<br><b>-ON Power up</b><br>-ON Select                                                    |
| Busy Time              | <b>200 Milliseconds</b><br>1 Second                                                            |

## RS-422A Serial Interface Board

## 37-poliges Interface

|              |     |      |      |     |      |
|--------------|-----|------|------|-----|------|
| Shield GND   | --- | o 1  | 20 o |     |      |
|              |     | o    |      |     |      |
| SSD+         | <-- | o 3  | 21 o | --> | SSD- |
| TxD+         | <-- | o 4  | 22 o | --> | TxD- |
|              |     | o    |      |     |      |
|              |     | o    | 24 o | <-- | RxD- |
| RxD+         | --> | o 6  | 25 o | --> | RTS- |
| RTS+         | <-- | o 7  | o    |     |      |
|              |     | o    | 27 o | <-- | CTS- |
| CTS+         | --> | o 9  | o    |     |      |
|              |     | o    | 29 o | <-- | DSR- |
| DSR+         | --> | o 11 | 30 o | --> | DTR- |
| DTR+         | <-- | o 12 | 31 o | <-- | DCD- |
| DCD+         | --> | o 13 | o    |     |      |
|              |     | o    | o    |     |      |
|              |     | o    | o    |     |      |
|              |     | o    | o    |     |      |
|              |     | o    | o    |     |      |
|              |     | o    | o    |     |      |
|              |     | o    | o    |     |      |
|              |     | o    | 37 o |     |      |
| Logic GNG/0V | --- | o 19 |      |     |      |

--- o --- no direction  
 <-- o --> from Printer  
 --> o <-- to Printer



## RS-422A Serial Interface Board

## Testplug RS422A

|       |    |     |    |     |
|-------|----|-----|----|-----|
| TxD   | 4  | --> | 6  | RxD |
| TxD   | 22 | --> | 24 | RxD |
| RTS   | 7  | --> | 9  | CTS |
| RTS   | 25 | --> | 27 | CTS |
| (DCD) | 13 | <-- | 3  | SSD |
| (DCD) | 31 | <-- | 21 | SSD |
| DTR   | 12 | --> | 11 | DSR |
| DTR   | 30 | --> | 29 | DSR |

ML 320/1 AND 390/1 CORESIDENTES SERIAL INTERFACE BOARD (OPTION)  
Used as RS-232C Interface only.

I. RS 232 Interface:

|             |          |          |
|-------------|----------|----------|
| <b>SP2:</b> | <b>A</b> | <b>B</b> |
|             | o-o      | o        |

For interface firmware 64-1578 Rev.02 of Q2 and higher only:

|                                          |          |          |
|------------------------------------------|----------|----------|
| <b>SP1:</b>                              | <b>A</b> | <b>B</b> |
| Protocol defined by Printer Menu Setting | o-o      | o        |
| Ready/Busy or XON/XOFF                   |          |          |

|                              |          |          |
|------------------------------|----------|----------|
| <b>SP1:</b>                  | <b>A</b> | <b>B</b> |
| Protocol Centr. Block Duplex | o        | o-o      |
| (STX/ETX/ACK/NAK Handshake)  |          |          |

Remark:

'Jumper Settings' of SP3/SP4/SP5 are not relevant for RS232 mode.  
In RS232-C mode interface firmware 64-1578 Rev.01 of Q02 does  
not support 'Centronics Block Duplex Protocol'. Therefore,  
jumper SP1 has no meaning in case SP2 determines RS232-C mode.  
(Jumper SP2 set to position A).

## RS 232 Interface:      25-poliges Interface

|          |     |   |     |    |   |              |
|----------|-----|---|-----|----|---|--------------|
| PROT.GND | --- | o | 1   |    |   |              |
|          |     |   |     | 14 | o |              |
| TxD      | <-- | o | 2   |    | o |              |
| RxD      | --> | o | 3   |    | o |              |
| RTS      | <-- | o | 4   |    | o |              |
|          |     | o |     | 18 | o | -->          |
| DSR      | --> | o | 6   | 19 | o | -->          |
| GND      | --- | o | 7   | 20 | o | --> DTR      |
| (DCD)    | --> | o | 8   |    | o |              |
|          | --> | o | 9   |    | o |              |
|          | --> | o | 10  |    | o |              |
| SSD      | <-- | o | 11  |    | o |              |
|          |     | o |     | 25 | o |              |
|          |     | o | 13  |    |   |              |
|          | --- | o | --- |    |   | no direction |
|          | <-- | o | --> |    |   | from Printer |
|          | --> | o | <-- |    |   | to Printer   |

ML 320/1 AND 390/1 CORESIDENTES SERIAL INTERFACE BOARD (OPTION)  
Used as Current Loop / 20mA Interface only.

## II. Current Loop Serial Interface:

SP2:                   A    B  
                          o  o-o

SP1:                   A    B  
Protocol definid by Printer Menu Setting    o-o  o  
Ready/Busy or XON/XOFF

SP1:                   A    B  
Protocol Centr. Block Duplex                o  o-o  
(STX/ETX/ACK/NAK Handshake (block size max. 8KB))

Remark:

- For 'Two-Wire Connections' only 'STX/ETX/ACK/NAK Handshake' possible!
- For 'Three- and Four-Wire Connections' all handshaks are supported.

### **Two-Wire Connections:**

SP3:                   A  B  C  
                          o  o-o  o

SP5:                   A    B  
                          o-o  o

a) Current Source: System Side/Host

Used Pins: D- = pin 10 and B+ = pin 18 must be jumpered.  
Used Pins: D+ = pin  9 and B- = pin 19 only.

SP4:                   A    B  
                          o-o  o

b) Current Source: Printer Side

Used Pins: D- = pin 10 and B+ = pin 18 must be jumpered.  
Used Pins: B- = pin 19 and SG = pin  7 only.

SP4:                   A    B  
                          o  o-o

**Three-Wire Connection:**

Current Source: Printer Side only

Used Pins: D- = pin 10, B- = pin 19, and SG = pin 7 only.

| SP3: | A | B | C   |
|------|---|---|-----|
|      | o | o | o-o |

| SP4: | A | B   |
|------|---|-----|
|      | o | o-o |

| SP5: | A | B   |
|------|---|-----|
|      | o | o-o |

**Four-Wire Connection:**

Current Source: System Side, Host only

Used Pins: D+ = pin 9, D- = pin 10, B+ = pin 18,  
and D- = pin 19 only.

| SP3: | A | B | C   |
|------|---|---|-----|
|      | o | o | o-o |

| SP4: | A   | B |
|------|-----|---|
|      | o-o | o |

| SP5: | A   | B |
|------|-----|---|
|      | o-o | o |

## Current Loop Serial Interface: 25-poliges Interface

|                     |     |   |     |    |   |                         |
|---------------------|-----|---|-----|----|---|-------------------------|
| PROT.GND            | --- | o | 1   |    |   |                         |
|                     |     |   |     | 14 | o |                         |
|                     | <-- | o | 2   |    |   |                         |
|                     |     |   |     |    | o |                         |
|                     | --> | o | 3   |    |   |                         |
|                     |     |   |     |    | o |                         |
|                     | <-- | o | 4   |    |   |                         |
|                     |     |   |     |    | o |                         |
|                     |     | o |     |    |   |                         |
|                     | --> | o | 6   | 18 | o | --> Current Loop TxD/B+ |
|                     |     |   |     | 19 | o | --> Current Loop TxD/B- |
| SIG.GND/0V          | --- | o | 7   | 20 | o | -->                     |
|                     | --> | o | 8   |    |   |                         |
|                     |     |   |     |    | o |                         |
| Current Loop RxD/D+ | --> | o | 9   |    |   |                         |
|                     |     |   |     |    | o |                         |
| Current Loop RxD/D- | --> | o | 10  |    |   |                         |
|                     |     |   |     |    | o |                         |
|                     | <-- | o | 11  |    |   |                         |
|                     |     |   |     |    | o |                         |
|                     |     | o |     | 25 | o |                         |
|                     |     | o | 13  |    |   |                         |
|                     |     |   |     |    |   |                         |
|                     | --- | o | --- |    |   | no direction            |
|                     | <-- | o | --> |    |   | from Printer            |
|                     | --> | o | <-- |    |   | to Printer              |

## Testplug RS232C

|       |    |     |    |     |
|-------|----|-----|----|-----|
| TxD   | 2  | --> | 3  | RxD |
| RTS   | 4  | --> | 5  | CTS |
| (DCD) | 8  | <-- | 11 | SSD |
| DTR   | 20 | --> | 6  | DSR |

**Testplug for Current Loop lokal Test**  
(simulates a two-/three-wire connection)

Current Loop RxD/D- 10 <-- 18 Current Loop TxD/B+  
Signal GND/0 7 <-- 19 Current Loop TxD/B-

**Jumper Setting for Current Loop lokal Test**

|             |          |            |
|-------------|----------|------------|
| <b>SP2:</b> | <b>A</b> | <b>B</b>   |
|             | ○        | ○-○        |
| <b>SP3:</b> | <b>A</b> | <b>B C</b> |
|             | ○        | ○ ○-○      |
| <b>SP4:</b> | <b>A</b> | <b>B</b>   |
|             | ○        | ○-○        |
| <b>SP5:</b> | <b>A</b> | <b>B</b>   |
|             | ○-○      | ○          |

Remark:

- SP1 in connection of printer menu selection may be used in order to test all three different hand shake protocols.